EXAM STRESS EXPERIENCED BY GCSE STUDENTS IN A MAINSTREAM SECONDARY SCHOOL: PERCEPTIONS OF THE EFFECTS ON WELLBEING AND PERFORMANCE

By

TIM ROOME

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School of Education
College of Social Sciences
University of Birmingham

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ABSTRACT

In the UK education system, an ‘audit culture’ has led to pressures being placed on students to achieve high grades in their GCSEs (Torrance, 2004). It has been suggested that schools are required to achieve good academic results and look after their students’ wellbeing, causing a conflict in relation to public examinations, such as GCSEs (Putwain, 2009). School staff support both performance and wellbeing by preparing students for exams. However, research suggests that there is a danger that many underperform, or are negatively affected (emotionally) by exam stress, or both (Putwain, 2007).

The aims of this research were to explore the views of students who had recently taken GCSE exams. The research aimed to gain an understanding of how Year 12 students felt their GCSE experiences affected their wellbeing and performance, what factors contributed to or alleviated their levels of exam stress, and whether theories such as Achievement Goal Theory (Elliot and McGregor, 2001) could be used to explain the individual differences in levels of exam stress. The research questions were explored using semi-structured interviews and Interpretative Phenomenological Analysis. Findings and conclusions provided ways to improve the support for students during their GCSEs, improving academic performance and wellbeing.

In dedication to the one who made this possible.

To the one who gives me confidence in all that I do and puts a smile on my face.

To my wife and my world… Tara

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GLOSSARY

CAMHS	Child and Adolescent Mental Health Service
GCSE	General Certificate for Secondary Education
EP	Educational Psychologist
IPA	Interpretative Phenomenological Analysis
NHS	National Health Service
SATs	Standard Attainment Tests
SEN	Special Educational Needs
SENCo	Special Educational Needs Co-ordinator
TEP	Trainee Educational Psychologist

CHAPTER 1: INTRODUCTION

1.1 Introduction

In this chapter, my position as a researcher and the reasons for conducting this research are explained. This research was conducted as volume one of a two-part thesis, as part of the doctoral course in Applied Educational and Child Psychology.

This research explored students' perceptions of exam stress in a mainstream school. It took a psychological perspective, largely due to my role as a trainee educational psychology (TEP). Psychological factors of exam stress were considered and qualitative methods were chosen to capture the lived experiences of students who have recently taken exams. This research offers a retrospective view of a phenomenon, from which we can learn. It aimed to address systems around the students (such as the school systems) to make a difference to the students' wellbeing and academic performance.

1.2 Researcher positionality

I am currently in training to become an educational psychologist (EP) at the University of Birmingham. The doctoral qualification is required to practice as an EP in the UK. During the doctorate, I have been on placement within local authorities. Casework and project work were carried out, similar to that undertaken by qualified EPs. This training, and the subsequent career, enables EPs to be practitioners and researchers simultaneously. The aim and reality of this is that research underpins and supports EP work. Conversely, our work as practitioners identifies areas of interest and areas for research. During my time as a trainee, I have worked in a number of secondary schools

and I have been involved in several projects to support children. This research exploring exam stress has been one of those.

When I was at school, my personal memories of GCSE (General Certificate for Secondary Education) exams are comprised of working hard for them, taking exams across a range of subjects and picking up some pleasing results. I cannot comment on feeling stressed by them, although I think I was aware of the significance of them, at the time and for my future. However, having been a teacher and having worked in schools more recently as a trainee educational psychologist, I am aware that these experiences are not the same for all and that for some, exams are the worst part of education.

Throughout my experiences of working with students and teachers in secondary schools, I have been very aware of the emphasis placed on academic performance. I have experienced several cases where students have been significantly stressed by exams and have required additional support from school staff, or external professionals, such as CAMHS (Child and Adolescent Mental Health Services) or EPs. As a result, I am aware of the need for research, support and improved practice to support students with exam stress.

1.3 Context

EPs work with children and families to support children in a variety of ways (Fox, 2003). This is most commonly working with children with learning needs and mental health difficulties. In addition, the work of EPs is often carried out in schools with school staff (Gersch *et al.*, 1990). This is seen as an effective way to work: upskilling staff through consultation and training, so they can work with children rather than EPs working with

individuals directly (Wagner, 2008). Although this is a simplistic view of the role, by working systemically with staff around a child, the contribution to change can be significant (Pellegrini, 2009). Research, such as this thesis, is needed to support EP practice in order to enhance the systems responsible for supporting children.

Most students in the UK take exams at various times throughout their childhoods and adolescence, with varying success. For lots of reasons, students can find exams very stressful and difficult, be it pressure from family or teachers, learning needs or susceptibility to stress (Putwain, 2007a). This was highlighted most strongly to me when, as part of my placement during the doctorate course, I conducted a small research project to support students in a school who were struggling with exam stress in the build up to their GCSEs. This project gave me my first in-depth view of what exams are like for young people today. The aim of that project was to identify the students' needs with regards to exam stress, support them and inform school staff of what they could do to support students in similar positions in the future.

This research took place whilst on placement in a local authority in the West Midlands. The local authority is a large urban borough, which has many secondary schools and many thousands of students. Statistically, it is not meeting the expected standards for supporting students in schools or attainment levels (*SEND inspection*; Ofsted, 2017) and it is therefore of interest to those working within the education system to help students with wellbeing and academic attainment: this research aimed to contribute to both these areas.

1.4 Rationale for research

The reasons for focusing on exam stress and why I wanted to do so should be recognised. As commented, this research sat comfortably with my own interests, as part of my role as a trainee EP. It became clear during my time on placement that systemic changes in education policy (Hall *et al.,* 2004) had increased the importance and pressure placed on students to perform, along with the other pressures already mentioned, i.e. pressure from family members, pressure on themselves and learning needs. These pressures and messages being relayed to the students, for many, had the desired effect of increased motivation and high academic achievement. For others however, it was clear that this resulted in poor performance and a challenge to their wellbeing.

The design, approach and aims of the research were shared with the Principal Educational Psychologist and agreed as a valued piece of work for local authority practice. It was hoped that the findings would support school and local authority practice in helping students taking exams.

1.5 Research aims

This research aimed to elaborate on understanding of the effects of exam stress by learning from the experiences of those who have just been through the exam process. The gathering of retrospective views of the young people aimed to illuminate what it was like for them and what could have been done to improve their experiences, with resulting effects on their wellbeing and performance.

The research questions were:

- How do Year 12 students feel their GCSE experiences affected their wellbeing and performance?
- What factors contributed to, or alleviated, levels of exam stress (personal, social and educational)?
- Can theories, such as Achievement Goal Theory, be used to explain the individual differences in levels of exam stress?

To answer these, the methodology chosen valued personal experience in a retrospective manner to identify what happened, why it happened the way it did, and what could be changed. The research demonstrated my interest in psychological research and knowledge building, but also reflected a pragmatic element: it was hoped that this research would support school practice to improve experiences for future students. The philosophical position taken for this research, interested in interpretation and phenomenology, reflected that of myself and my approach to EP work.

1.6 Layout of research

This research outlines existing literature, describes the methodology used, the findings and conclusions. In chapter 2, previously published literature is reviewed, to give context in relation to exam stress: possible causes of exam stress, the effects of it and what can be done to support students with forthcoming exams. In chapter 3, the research methodology and analytic process are discussed. This gives detail as to the methods chosen and reasons why, given the philosophical position and research aims. It also outlines the processes undertaken to carry out the research and analysis, including ethical considerations, participant information and analytic steps. Chapter 4

summarises the findings from the research and includes the discussion in relation to existing literature. Comparison to existing literature identified in the literature review is offered. Chapter 5 is the conclusion to the research, summarising findings, identifying implications for practice and presenting a critique of the research.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

In this literature review, the key terms have been discussed: mental health and wellbeing, exam stress and performance. Exam stress then became the particular focus, exploring its prevalence within the UK education system, the possible causes of exam stress and the effects of it. In addition, a model was reviewed (*Achievement Goal Theory*; Elliot and McGregor, 2001) as a way of identifying individual differences in the level of susceptibility to exam stress, likelihood of coping with it and the detrimental effects of exam stress. This model was then explored as part of the empirical work of the research.

To carry out the literature review, the following procedure was adopted from Boyle, Connolly and MacKay (2016): published literature from the period of January 2000 to present day (January 2018) was searched for relevant publications. In addition, pertinent citations outside of this range from within these publications have also been included. The following relevant databases in Education and Psychology were searched:

- EBSCO Education Databases (made up of 5 databases – British Education Index, Child Development and Adolescent Studies, Educational Administration Abstracts, Education Abstracts, and ERIC- Education Resource Information Centre);
- Proquest Social Sciences (U.S. Department for Education sponsored database for applied social science research);
- COPAC (merged online catalogues of 24 UK University Libraries and the British Library);

- PsycINFO – Ovid (professional and academic literature in psychology and related disciplines).

To carry out the literature search the following search terms and inclusion criteria were applied:

Table 1. Search terms and inclusion criteria

	Primary	Additional	Reasoning
Search terms	'exam stress' 'examination stress' 'academic stress' 'test anxiety'	'school' 'student' 'pupil'	To find relevant studies. Include all variations. Identify all publications that related to exam-based stress in a school context.
Inclusion criteria	Reported after 2000, Subject to peer-review, Studies that covered an age range of 9-18 years, Young people taking external examinations.	Studies that discussed a range of causes, effects and recognition of individual differences to exam stress.	Recent and relevant research. Reliable studies that could be cited. Pertinent to the UK education system. Pertinent to the empirical part of the research.

2.2 Mental Health and Wellbeing

'Mental health' as a construct, has been described as comprising of emotional literacy, emotional intelligence, emotional health and wellbeing, psychological wellbeing, emotional behavioural difficulties, and mental health disorders (Weare, 2010). Definitions of mental health acknowledge the importance of personal relationships, learning, and psychological development (Mental Health Foundation, 1999; Public Health England, 2014). However, it has been commented that mental health can refer to different things to different professional groups and people (e.g. CAMHS professionals, education professionals, psychologists and parents) (Weare, 2004).

The varying language used to define mental health may be creating a barrier to joint working and effective provisioning to support those with mental health difficulties (Weare, 2010).

A common definition of mental health is that it is a continuum, with 'good' mental health at one end and severe mental illness at the other (Dogra *et al*., 2002). The continuum of mental health, including the recognition of positive wellbeing, is often adopted by those working with young people as it enables mental health to be viewed in a positive sense (Liddle and Carter, 2015). Although this continuum is used within professional groups such as Educational Psychologists (EPs), it can be criticised as it does not attempt to define or detail thresholds by using a diagnostic approach (Scott, 2002). Within a medical model of practice, a more specific definition may be desirable to assist clinical interventions (Scott, 2002). However, the continuum does recognise the breadth and variety of mental health needs, as well as positive mental health.

The term 'wellbeing' is used interchangeably or as part of the mental health continuum (Dogra *et al*., 2002). 'Wellbeing' was suggested to be a balance of psychological, social and physical resources that maintain a positive mental state (Dodge, 2012). A position of 'wellbeing', supported by effective social relationships, context-appropriate behaviours, cognition and emotion, enables a person to respond to the demands of the environment in which they find themselves (Health Advisory Service, 1995; Public Health England, 2014). It can be used as a positive term to promote positive mental health (Liddle and Carter, 2015). Seligman (2011) supported this terminology, commenting that wellbeing was a combination of positive emotions, engagement, positive relationships and achievement. That said, not all agree: Gillett-Swan and Sargeant (2015) suggest this was a subjective view of wellbeing and a clearer definition was needed.

There are a number of perspectives available when considering the terms ‘mental health’ and ‘wellbeing’. Popular within education is the psychosocial perspective: this perspective is used in the work of social care and education professions, including EPs (Miller, 2003). This perspective suggests meeting the needs of individuals in their natural settings (home and school, for example) and supporting change in the interactions between the person and the systems around them (Wagner, 2000). This person-centred approach often involves consultative practices in order to maintain the person’s wellbeing, using all those involved as experts of the system and the individual (Wagner, 2000). This contradicts and moves away from a more medical or ‘expert’ model of mental health (Scott, 2002).

A medical perspective argues that mental health is definable by symptoms: particular conditions, illnesses and disorders are labelled. These are categorised through the use of medical frameworks such as The Diagnostic and Statistical Manual of Mental Disorders (5th ed.; *DSM–V*; American Psychiatric Association, 2013). By doing so, it enables understanding through the recognition of emotional, social and behavioural needs of children and young people (Scott, 2002). This perspective has been argued to promote evidence-based approaches to mental health intervention which a more psychosocial perspective may not (Wolpert *et al*., 2006). However, it could be argued these take insufficient account of context within which mental health difficulties are found (Tew, 2005). The ‘one size fits all’ medical model has been criticised for not being specific to individuals, given the complexity and diverse needs in the variety of contexts in which they are found (Dogra *et al*., 2002).

Many models and frameworks aim to create a state of wellbeing by incorporating the psychosocial perspective. Notably, systems theories identify the various systems that affect a person and are affected by them. An example of this was Bronfenbrenner’s

(1979) Ecosystemic approach, where involvement at macro-, meso- and micro-systems levels supported wellbeing. This model suggested that making changes to the systems enabled one to move away from diagnosis and labelling. That said, the psychosocial perspective does not fully dismiss a medical approach and can complement the traditional clinical interventions. Systems theories are holistic approaches which associate a person's symptoms and the realities of their social and personal experiences (Tew, 2005).

McDonald and O'Hara (1996) proposed a framework for mental health to support understanding and practical work at a national, regional and local level: this identified five main elements to support positive wellbeing outcomes, and five contrasting poles which hinder wellbeing: environmental quality, self-esteem, emotional processing, self-management and social participation (McDonald and O'Hara, 1996). This links to the continuum definition of mental health (Dogra *et al*., 2002) and reflects the work of Bronfenbrenner (1979) as described above. This framework is supported by recent research: Coverdale and Long (2015) identified the need for good quality social relationships: Aldridge *et al*. (2016) commented on wellbeing in schools, surmising that life satisfaction and resilience minimised the challenges of the school climate and protected wellbeing. The Department for Education (DfE, 2016) also offered guidance on strengthening resilience to foster positive mental health and wellbeing.

'Mental health' and 'wellbeing' are evolving terms and therefore need to be described in relation to this research. The terms are used interchangeably, but 'wellbeing' is principally used as it related closely to the continuum definition (Dogra *et al*, 2002). 'Wellbeing' also represents a more positive view of a child's sense of happiness, involvement, and psychological and emotional states (Mental Health Foundation, 1999). For the purposes of this research, 'wellbeing' is defined as a positive state which

needs to be maintained through consideration of a variety of factors and the reduction of the challenges to this state.

2.3 Performance

Principally, performance in relation to schools, children and young people is measured through attainment. Measurement of performance is more difficult than it first appears because social data (collected in social contexts, e.g. schools) invariably have a degree of error, unobserved influences and unexplained variation (Gorard, 2010). However, even in relation to social and educational performance, there is still a need to define performance in order to measure it (Armstrong and Baron, 1998). It can be argued that performance is a multi-dimensional construct: the overarching aim is to assess either performance outcomes or performance behaviour (Armstrong and Murlis, 1994). In this research, the term 'performance' is used to describe school-related performance at a systemic level and also individual attainment and academic performance. Other terms such as 'attainment' or 'achievement' were not chosen as these tend to relate to individuals rather than school-level performance.

2.3.1 School performance

School attainment, based on a collective set of exam results, is one way school performance is measured (DfE, 2013). School-level models of performance use final examination results as the outcome measure of performance (Woodhouse and Goldstein, 1988; DfE, 2013). However, the use of external tests of achievement has been a contentious issue for a long time (Stobart, 2008) and it is a system that is continually being redefined and altered. The validity of exam results as a measure has

been scrutinised (Torrance, 2004) and the measurement system has been adapted as a result.

A recent example of change in educational performance measurement was the introduction of ‘Progress 8’, introduced to schools in 2016 (DfE, 2016). The aim was to measure ‘value-added’ rather than overall student performance. The objective was to negate some of the external factors that can alter a student’s attainment and more accurately assess school performance by measuring the impact the school had on the students’ performances (DfE, 2016). This can be described as a multi-level model of performance measurement as it monitors the students’ and the school’s performances. However, this approach is not without criticism: Gorard (2007) commented that multi-level models of performance measure are not improvements on simpler (previous) methods in practice. There are still a vast number of variables within a school, and external to the school, that affect children and their academic performance. While these are not accounted for, performance will remain hard to measure (Gorard, 2007).

In addition to the ‘Progress 8’ changes to secondary education in the UK, it is also to note the current context within school and GCSE examinations. Political changes in 2010, brought education reform in 2014, with a number of high-profile changes to policy, curriculum and examinations (The Guardian, 2014). Most relevant to this research, was the new GCSE system which moves to primarily exam-based assessment and reduced coursework. By 2018, when this research took place, schools were using the new systems, but may still be getting used to them (ATL: TES, 2017). The same applied to the students who may have been caught between two systems: the old ‘letter grade’ system (A*-E) and the new reformed number-led system (1-9). These recent changes could add to the pressures of public examinations, adding to the levels of stress experienced by staff and students.

2.3.2 Individual performance

Student performance can be measured through academic attainment via various systems of assessment, including examinations. Performance on an individual basis is likely to be shaped by many factors. The school system can influence individual performance through factors such as teaching quality, pedagogy, resources, class-size and varying levels of support. There are however, other factors that cannot be controlled in the same way by schools. These include socio-economic factors (Eason and Bolden, 2005), prior attainment (Ray, 2006), genetic influences (Haworth *et al*., 2011) and to some extent, parental engagement (Harris and Goodall, 2008) and self-efficacy (Stankov and Lee, 2014). This poses a problem to school-level models of performance as the effects cannot be isolated to measure school performance (Torrance, 2004).

Student performance is measured by assessments (e.g. end of year testing, Key Stage exams, and GCSEs). Schools regularly carry out internal and external assessments in order to monitor, track and improve academic performance (Putwain *et al*., 2012). It is stated by the government (DfE, 2013) that all assessments should be formative, with a view to enhancing practice and continuing school improvement. Many of the external assessments however, such as GCSEs, are summative and are used to varying levels as a measure of achievement (Torrance, 2004). This is a way of comparing students, schools and local authorities to one another, and within the country as a whole.

Public or external examinations aim to provide a standard measure of performance (DfE, 2016). Children spend a large amount of time in schools and are in a public arena of performance-related judgement for much of this (Torrance, 2004). This is particularly the case with older children, such as late secondary education and the GCSEs. At the

end of Key Stage 4, the attainment of 5 A* to C grades in the GCSEs is considered the benchmark for academic success (Jackson, 2006).

It is important to note that while performance can be related to an organisation (school), this research has explored the performance of individuals (students). Performance has been discussed in relation to exam stress and how these two concepts interrelate.

2.4 'Test anxiety' and 'exam stress'

'Stress' has been extensively explored within psychology research since the 1950s and there is now an understanding of the antecedents, mediators and outcomes of stress (Putwain, 2007a). There has been exploration into stress in student populations and the effects of academic work, exams and other school-related pressures on the levels of worry and stress (Spielberger, 1980; Zeidner, 1998). Exam-related stress is a source of stress that has been explored and is recognised as a unique and relatively short-term source of stress (Connor, 2001), but one that can have a large detrimental effect on wellbeing (Denscombe, 2000) and academic performance (Zeidner, 1998).

'Stress' is associated with psychological distress and can adversely affect academic performance (Pritchard and Wilson, 2003). People vary in coping skills in relation to stress and the same goes for exam stress (Austin *et al*., 2010). 'Academic stress' includes various sources of stress: lessons, homework, revision and exam preparation, and the exams themselves (Connor, 2001). It has been commented that the exams

are the most significant source of stress (Connor, 2001). This explains why much of the existing research narrows its terms to ‘exam’ or ‘examination’ stress (Putwain, 2007b).

There are two overlapping terms relating to academic stress and exams. ‘Exam stress’ and ‘test anxiety’ are used extensively and interchangeably (Putwain, 2008b). There are some differences in these two concepts and many studies have not clearly defined these terms (Putwain, 2008b). Hall *et al*. (2004) explained that an increasing amount of school activity is exam-focused, blurring this distinction all the more. Within much of the literature, the terms ‘stress’, ‘worry’ and ‘anxiety’ are used (e.g. Gallagher and Millar, 1996), but there needs to be a distinction between the constructs in order to avoid confusion.

‘Test anxiety’ is a construct derived from the effect anxiety has on performance (Spielberger, 1980; Putwain, 2008b). Although the Diagnostic and Statistical Manual of Mental Disorders (5th ed.; *DSM–V*; APA, 2013) does not include ‘test anxiety’ as a separate clinical disorder to anxiety, the previous version DSM-IV (APA, 1994) considered it as part of social phobia. This is characterised by a ‘marked and persistent fear of social or *performance* situations in which embarrassment may occur’ (APA, 1994, p. 450). ‘Anxiety’ refers to a subjective experience of fear along with physiological arousal (Eysenck, 1992). This is recognised by an increased heart rate, sweaty palms and swifter breathing, even nausea and chest pains (Hembree, 1988). In addition, the cognitive elements of anxiety, namely worry and concern, result in intrusive thoughts and a perception of vulnerability (Putwain, 2007b). ‘Anxiety’ as a construct relates to the outcomes of a given stimulus, both physiologically and psychologically (Zeidner, 1998) and is reacted to in various ways along a continuum

of severity (Zuriff, 1997). ‘Test anxiety’, separate to anxiety, occurs when individuals are in evaluative situations, such as public examinations (Tobias, 1992).

‘Exam stress’ as a construct does not focus solely on performance in the same way as test anxiety: it indicates the potential for detrimental effects to wellbeing, negative emotional and health outcomes, as well as educative consequences (Putwain, 2007b). Further separation from test anxiety is demonstrated in the difference in how it is defined: anxiety is an outcome, whereas stress is described by Reber (2005) as something that can be a cause or an effect. Anxiety could therefore be viewed as one of the outcomes of exam stress (Putwain, 2007b), alongside other feelings including anger, depression, lower efficacy and negative affect. Stress also refers to the subjective response to these situations: the feeling of stress and the emotional state of worry (Putwain, 2007b).

‘Test anxiety’ and ‘exam stress’ constructs may be used to explain further the causes of stress, the resulting impacts of stress, and to explore individual differences in response to stress. For example, the links between the test anxiety/exam stress constructs and other constructs such as achievement goals (fear of failure, academic self-concept) and mindsets (mastery or performance) are well supported (Dweck, 1986; Putwain and Symes, 2012; Putwain, Remedios and Symes, 2016).

For this research, the construct of ‘exam stress’ has been chosen, to look broadly at and encompass all possible outcomes of stress in relation to exams. The effect of viewing ‘exam stress’ as a different construct to ‘test anxiety’ is that it can be measured in a different way. Many of the standard measures (e.g. Gallagher and Millar, 1996; Struthers *et al*., 2000) may limit responses to anxiety, whereas a broader, more qualitative method can fully explore exam stress. Qualitative research has not been

carried out to the same degree and it is particularly lacking in the UK (Denscombe, 2000). Although ‘exam stress’ has been commented upon and the empirical findings refer extensively to ‘exam stress’, the term ‘test anxiety’ has been used when referring to research in which this term was used in the original literature.

2.5 Prevalence of exam stress

Exam stress is a common discourse within educational settings and students are receiving more school-based support with exam-related stress (Jamieson *et al*., 2016). Putwain (2008b) suggested two policy changes increased general awareness and interest in the area of exam stress. First, public exams became a measure of school and teacher performance which increased the requirements for schools to ‘achieve’. Accountability, league tables and target setting prompted a critical focus on the role of assessment (Putwain, 2008b). Since the early 2000s there has been increasing interest in exam stress as the ‘audit culture’ of schooling has increased (Torrance, 2004). Second, the ‘Every Child Matters’ (DfES, 2004) agenda made schools become responsible for student wellbeing (Putwain, 2008b). Although mental health had been identified as a focus for schools prior to this publication, no formal document or government strategy had been in place. Subsequently, the Department for Education (DfE, 2014b), have given more recommendations on mental health and behaviour in schools and continue to position mental health as part of their school monitoring agenda. Although Putwain’s identification of these policy changes has been criticised as a narrow view of the education system, it indicated some of the forces that have increased the need for recognition of students’ stress in schools.

There is limited research in the UK education system relating to exam stress. Despite first being researched by Follin in 1914 (Follin *et al*., cited in Spielberger & Vagg, 1995), little research was carried out until the 1990s. Exploratory data from several studies indicated that exam stress is systemic throughout the education system, particularly for those facing high-stakes exams, such as GCSEs at the end of Key Stage 4 (Spielberger and Vagg, 1995). Gallagher and Millar (1996) found that within 4000 students in Ireland who ranked all their worries in order, 6 out of the top 10 worries were related to schoolwork. Passing exams was ranked top. Putwain (2007a) identified that worry was a significant factor experienced by many students with exams to take. Denscombe (2000) reported similarly, where students rated exams among the highest threats to their health. However, it was argued that exam stress was likely to be experienced by 25% of all students (Bradley *et al*., 2007), but girls reported it more readily. In another study, all 39 participants had experienced a degree of exam-related stress (Chamberlain, Daly and Spalding, 2011). They all felt strongly about it and wanted to discuss it.

These results indicate some discrepancies in the prevalence of exam stress. The prevalence of mental health difficulties in young people can be debated, as recognised in the media (*students are getting better at asking for help*; The Guardian, 2017). The apparent increase in general mental health issues could be as a result of different factors: there may be real changes in the amount of mental health issues, or changes in sociocultural contexts in which mental health is recognised and talked about, or a change in the way mental health needs are perceived by people, professionals included (Liddle and Carter, 2015). However, with the increasing interest, research is needed to identify ways to accurately identify and support young people, and more idealistic perhaps, to challenge the status of exams as a form of assessment.

2.6 Effects of exam stress

The effects of exam stress can be varied and individualistic (Putwain *et al*., 2012). There is research suggesting some stress can be positive, improving attention and motivation: exams were viewed as a challenge rather than threatening, which therefore promoted performance (Putwain *et al*., 2012). However, the majority of research indicates a more negative effect of exam stress (Denscombe, 2000). This is because it can disrupt and challenge the wellbeing of a student or affect performance and the ability to achieve as a result (Denscombe, 2000; Chamberlain, Daly and Spalding, 2011).

2.6.1 Effects on wellbeing

The effects of stress generally on a person's wellbeing are well documented (e.g. Zeidner, 1998). It has been recognised that prolonged exposure to stress can result in a number of negative or maladaptive physical and psychological outcomes (Dull, Shleifer and McMillan, 2015). These symptoms are believed to be as a result of either long exposure to high levels of stress, or significant levels of stress in response to a particular event or situation (Connor, 2001). Often, symptoms reduce and one returns to a state of wellbeing after exposure to the stressful event has subsided, but longer-term effects can occur (Chamberlain, Daly and Spalding, 2011).

Exams were cited as being stressful events for young people (Putwain, 2007a) and as a result, the stress caused the same physiological and psychological implications as other stressors. Denscombe (2000) identified that exams were stressful and significant for young people: greater than any other stresses in their stage of life so far. While

much of the emphasis is on the impact on performance (Putwain, 2008a) there is a significant challenge to wellbeing too (Putwain and Symes, 2012). Exam stress was associated with psychological distress (Morrison and O'Connor, 2005): research found associations between exposure to stress and increased levels of worry, neuroticism and other stress symptoms, e.g. raised blood pressure (Matthews, Deary and Whiteman, 2003). Also, it was noted that there was reduced extroversion and conscientiousness as a result of exam stress (Vollrath, 2000). However, symptoms of stress varied between individuals and Robson *et al*. (1995) identified that what was stressful for one, may not have caused wellbeing issues for others. It is recognised that symptoms of stress were moderated by various coping strategies to deal with the level of stress, to protect one's wellbeing (Denscombe, 2000).

Long term effects of exam stress have also been discussed, particularly in relation to students' identity. Giddens (1991) identified that academic work was a significant contributor to wellbeing as it constituted part of one's identity, the same as race or gender. Exam stress and pressure to achieve therefore caused a challenge to wellbeing. Academic success, measured through public exams, is used as a measure of the person and used as a comparison to others (Denscombe, 2000). Identity is therefore formed or altered publicly and with limited control, causing significant levels of stress and a challenge to wellbeing (Giddens, 1991).

Similarly, self-efficacy and confidence are challenged by exam stress. This is believed to be because success or failure is perceived to have a major impact on the prospect of doing well in the future (Denscombe, 2000). Some students may use negative appraisals of the situation, causing them to have lower confidence in exam situations (Putwain, 2007b). Competence beliefs were challenged, causing symptoms of anxiety (Putwain and Symes, 2012), although these were moderated through different

motivations and achievement goals (Elliot and Pekrun, 2007). A lack of self-belief in one's competence resulted in high levels of stress and worry when faced with exams (Gallagher and Millar, 1996). In addition, the pressure to succeed (Denscombe, 2000) can have an effect on wellbeing: parental and teacher pressures contributed to stress levels and reduced students' belief in themselves (Oishi and Sullivan, 2005; Peleg, Deutch and Dan, 2016). These findings make links to the notion of self-determination (Deci and Ryan, 1985) in which the concept of 'we are what we make of ourselves' indicates the challenge to wellbeing (Giddens, 1991). The pressure to achieve caused additional stress that some found hard to cope with (Putwain, 2009b).

2.6.2 Effects on performance

The constructs 'anxiety' and 'stress' are widely reported to have various physiological and psychological effects: many report them to be inversely correlated with high performance (Pritchard and Wilson, 2003). Sarason and Mandler (1952) first proposed the notion of 'test anxiety' and concluded that it was negatively correlated with many intellectual variables. They named this 'cognitive interference', sometimes known as the 'interference model', as it was thought that cognitive skills were impaired or reduced as a result of the symptoms of anxiety. Moreover, it was stated that impaired cognitive skills were symptoms of anxiety (Chapell *et al*., 2005). Performance of highly test-anxious students was consistently lower than low test-anxious students of the same ability (Hembree, 1988; Seipp, 1991). More recently, it has been commented that there was a strong negative correlation between test anxiety and performance in secondary aged students (Sung, Chao and Tseng, 2016).

When anxiety increases for a prolonged period, performance will decrease (Ramirez and Beilock, 2011). Moreover, Chamberlain, Daly and Spalding (2011) reported the detrimental effects specifically in the build-up to the day of the exam. They identified that stress interfered with preparation and revision for exams. The stress felt by participants was manifested by a lack of sleep, tiredness, guilt about their revision levels and being overwhelmed. It was commented that this state could lead to the forgetting of content and feeling less prepared (Chamberlain, Daly and Spalding, 2011). However, this was reduced by feelings of confidence about the subject and exam: the more confident, the less the effects of stress on preparation.

Research has suggested why stress impairs performance: some found that the process of worrying which accompanies stress used up cognitive resources (Benson and Allen, 1980). It was reported that stress caused unhelpful thoughts, often irrational and unrelated to the task in hand, resulting in lower scores than students were capable of achieving (Hong and Karstensson, 2002). In support, Beilock (2008) commented that cognitive capacity was impaired due to stress, resulting in less working memory available for the cognitive tasks of an exam. Harlen and Deakin-Crick (2002) carried out a review of the literature and suggested that the curriculum and classroom activities that prepared students for exams increased exam stress, resulting in children being discouraged and demotivated from learning. Hall *et al*. (2004) described this as students becoming 'SATurated' and developing increased anxiety and a fear of failure.

Despite this evidence, some report improved performance (Eysenck and Calvo, 1992). There is counter-evidence that a small degree of stress is motivational and often required in order to perform (Derakshan and Eysenck, 2009): exam-day stress can actually increase performance (Putwain *et al*., 2012). It was suggested that stress aided performance through increased motivation. Putwain *et al*. (2012) described a

number of factors that resulted in more positive views of exam stress: perceived competence, challenge rather than threat appraisals, and how good results can contribute to self-worth and positive attitudes to learning. These findings supported previous research (Putwain, 2007a; Folkman, 2008) which also discussed positive appraisals of test situations.

This positive effect was demonstrated by the motivation enhancement model (Sung, Chao and Tseng, 2016). This model explained that stress increased motivation to a given task (Cassady and Johnson, 2002). It was reported that stress caused a student to pay more attention to the task or exam (Eysenck and Calvo, 1992), which led to greater efforts to be made and improved performance as a result (Hardy and Hutchinson, 2007). Others commented that stress can increase problem-focused coping (Struthers *et al*., 2000). Conversely, those who did not report high stress in exams may lack sufficient motivation to perform to their highest ability (McDonald, 2001). This model is in contrast to the interference model (Sarason and Mandler, 1952) but indicates why some may still perform well, even in highly stressful situations.

Putwain *et al*. (2012) identified that exam stress can be both positive and negative: this also highlighted that stress is likely to affect some more than others (Austin *et al*., 2010). While there is some discrepancy in the effects of stress on exam performance, there is substantial evidence of reduced cognitive capacity and other detrimental effects (Hall *et al*., 2004). It is important to note that there is a limited amount of qualitative research exploring exam stress (Putwain, 2007b; Putwain, 2009b) and it could be argued that due to the nuanced and individual interpretations of and coping with stress, a more qualitative methodology would be appropriate to investigate the effects of exam stress (Putwain, 2007b).

2.7 Causes of exam stress

There is a combination of factors that may contribute to levels of exam stress. These can be categorised into two groups; external or internal factors. External factors are sources of stress around the child, such as school systems and external pressures to achieve. Internal factors relate to the way in which students perceive their achievements, construct their self-worth and experience a challenge to this self-belief when faced with exam situations (Rosenzweig and Miele, 2016). It has been reported that one's own (internal) factors and the external sources of stress can result in high levels of exam stress (Putwain, 2009b). Therefore, both the external factors and the more individualistic, internal factors need to be recognised.

2.7.1 External: revision and exam preparation

There are factors as part of exam preparation and the events themselves that cause stress (Chamberlain, Daly and Spalding, 2011). Pre-exam triggers of stress included high revision workloads, where the amount of work increases significantly from the learning stages of the year. Revision was reported to be burdensome and inherently stressful (Chamberlain, Daly and Spalding, 2011). Additionally, the impact of unexpectedly poor mock results had increased exam stress (Chamberlain, Daly and Spalding, 2011). This led the authors to question the purpose of mock exams. They were meant to provide formative feedback and exam-style practice, but caused conflict, confusion and panic (Chamberlain, Daly and Spalding, 2011).

On the actual day of exams, stress can be increased by timetabling issues and exam congestion (Sung, Chao and Tseng, 2016). The school policies about arrival times and preparation for exams also caused stress: students commented on not being allowed

to arrive too early, staff were slow to start the exams, poor seating arrangements and the limited time to complete tests (Austin *et al*., 2010). Time pressures were commonly reported as a source of stress: either actual or perceived time pressures (Sung, Chao and Tseng, 2016), where students felt pressure to write fast, resulting in unstructured answers and panic.

2.7.2 External: family and peer pressure

In addition to the exams themselves, family members and peers were commented on as well as their own internal pressure to do well (Denscombe, 2000). For example, parental 'nagging' about the need to revise was cited as a cause of significant stress (Chamberlain, Daly and Spalding, 2011). Parental pressure and expectations can motivate some but increase stress if the expectations are unrealistic (Fox *et al*., 2005; Oishi and Sullivan, 2005). Parental academic expectations were particularly influential on 'test anxiety' if the child's expectations differed to the parents' (Peleg, Deutch and Dan, 2016). This study provided evidence that it was possible to identity stress-vulnerable students: those with higher perceived parental expectations experienced higher test anxiety (Peleg, Deutch and Dan, 2016). However, research suggested that a compensating factor was the attachment and relationship the student had with their parents (Berry and Kingswell, 2012). In the same way that parents could add to stress levels, the same was seen with students with high levels of fusion with their friends (close to other students and cared what they think). Other students discussed the challenges they felt when comparing to peers after an exam, talking about content and answers (Chamberlain, Daly and Spalding, 2011).

2.7.3 External: pressure from teachers

Another external factor causing exam stress was reported to be teachers (Denscombe, 2000) as they are responsible for the setting of predicted grades and even choosing subjects. An increase in stress was reported as a result of high predicted grades and feelings of being unprepared (Austin *et al*., 2010). Teachers can cause additional stress when their expectations were not the same as the students (Hall, 2004; Putwain, 2009). Some students were openly critical of their school and individual teachers for increasing their exam stress (Chamberlain, Daly and Spalding, 2011).

In addition, it was commented that teachers reminded students of impending exams and often used 'fear appeals' to do so (Putwain and Roberts, 2009). 'Fear appeals' are "attempts by teachers to motive students by highlighting the consequences of failure" (Putwain and Symes, 2011, p. 456). It is based on an implicit belief that in order to avoid failure, students will increase their effort levels (Putwain, Remedios and Symes, 2016). However, fear appeals which are supposed to add motivation, have been reported to instil frustration and anxiety (Putwain and Roberts, 2009). Fear appeals draw attention to the negative consequences of a particular action in order to elicit a change in behaviour: in this case, an increased work motivation and more revision (Putwain, Remedios and Symes, 2016). However, even in motivated, low-stress students, fear appeals did not add positively to their motivation: most finding them unnecessary and unhelpful (Putwain, Remedios and Symes, 2016). According to Putwain (2009b) the fear of failure was a significant cause of stress: students used avoidance strategies rather than seeing the exams as a challenge. Research suggested that this type of fear appeal was often more stress-inducing than realised (Putwain, 2009b). However, for some, this challenge of exams could act as a motivator, and be used by staff in this way (Putwain, Remedios and Symes, 2016). This relates

to how these messages from staff are appraised (an internal factor) (Putwain and Symes, 2011).

2.7.4 Internal: self-identity

Many participants, as part of a qualitative study looking at stressors in school, gave comments relating to the exams (and results) as being a benchmark of who they were: a self-identity marker (Denscombe, 2000). Moreover, the results are made public: this made it a larger challenge to self-identity than internal beliefs or values (Denscombe, 2000). Students are gauging themselves (and others) by their attainment, adding to the pressure and stress they put themselves under (Giddens, 1991). There is a shared view that stress is caused by having desires to achieve educationally, but also believing that failure would influence their future and self-worth (Putwain, 2007a).

Moreover, it may be interpreted that possible failure at a relatively early venture is unthinkable and stress-provoking (Denscombe, 2000). The comparison to others had an effect on one's self-efficacy: students were concerned that they will fail to achieve as much as others, and that their results will influence their futures (Putwain, 2008a). Importantly, these challenges to one's identity result in differences in the way in which some people interpret and respond to previous experiences: it was reported that experience (through practice and mock exams) helped some students, as did having reasonable, informed expectations (Putwain *et al*., 2012).

2.7.5 Internal: cognitive factors

Internal working memory has been cited as an internal factor that limits one's ability to cope with stress (Beilock and Carr, 2001). Similarly, some argue that we have genetically determined responses to stress (Rosenzweig and Miele, 2015). While this could be viewed as reductionist, it may explain some of the individual differences seen

in stress levels and coping in stressful situations (Rosenzweig and Miele, 2016). The research suggests that individual differences were seen with levels of coping skills and levels of stress. Research has been carried out to investigate how this varies between groups of students: high and low ability, for example. Aherne (2001) found that those who defined themselves in terms of their academic success had higher stress levels. This goal-orientated standpoint therefore merits further exploration (Elliot and McGregor, 2001).

Similarly, students' appraisals of the same situation vary, altering the level of stress that is felt: those who viewed an exam as a threat displayed higher stress levels (Strack and Esteves, 2015). Exams and fear appeals from staff, can either be appraised as a challenge (in a positive sense) or as a threat (Putwain and Symes, 2014). When fear appeals from staff were appraised as being threatening, exam stress was increased, which resulted in lower motivation and lower grades (Putwain and Symes, 2011). The appraisals made by students were reported to be associated to their self-efficacy and belief in their ability to achieve in a given task (Parker *et al*. 2014). A student with a lower self-efficacy was more likely to have a negative appraisal and view exams and fear appeals as threatening (Putwain, Remedios and Symes, 2016). This is interesting, as it has been shown that confidence and self-efficacy can be negatively affected by exam stress, indicating a two-way relationship between exam stress and efficacy (Putwain, 2007a).

2.7.6 Internal: gender differences

Differences between males and females have been researched with contrasting results. Putwain (2008a) described how socio-economic background had more impact on the test anxiety-performance relationship than gender, but later identified that girls

reported to be stressed significantly more than boys (Putwain and Daly, 2014). Moderate gender differences were present in the worry and tension components of test anxiety, which indicated to the authors that specific and individual help would need to be sought by those experiencing high levels of stress (Putwain and Daly, 2014). There is evidence that higher levels of 'test anxiety' were seen in girls (Sung, Chao and Tseng, 2016) and this was thought to be linked to their interpretation of exam situations; threat vs challenge (Putwain *et al*., 2012). Denscombe (2000) found similar results, where girls rated it the highest threat to their health, and boys fourth highest. In contrast however, it has been shown that exam stress was likely to be experienced by as many as 25% of all students, but girls may report it more readily (Bradley *et al*, 2007). This challenges previous findings and seeks more clarity on whether girls suffer from exam stress more or simply report it more readily.

The gender difference is apparent in most studies that have used self-reported test anxiety (Putwain and Daly, 2014). While this is debated as the willingness to report such difficulties (Egloff and Schmukle, 2004), there are differences within the construct of test anxiety: girls tended to report higher emotionality than the worry component of test anxiety. This indicates they experience more, or report more, of the physiological aspects of stress than the cognitive elements in comparison to male counterparts (Putwain and Daly, 2014). This has been explained through the differences in temperament seen between genders, levels of exposure to threat situations and psychosocial influences of gender roles (Putwain and Daly, 2014; Zeidner, 2014). In addition, females reported a mixture of worry about failing exams and worry about receiving negative judgements from others (Putwain and Daly, 2014). These findings therefore support Putwain's (2007a) comments about exams being a challenge to self-identity and self-worth. Putwain and Daly (2014) conclude that individuals who display

raised anxiety, particularly females with significant levels of worry, should receive additional support in schools.

2.8 Individual differences in coping with exam stress: psychological considerations

Despite exam stress being systemic across the UK education system (Spielberger and Vagg, 1995), there is recognition that students respond in a variety of ways in exam situations. Some students were unaffected by stress, some performed better due to increased motivation and others suffered detrimentally in terms of wellbeing and performance (Chapell *et al*., 2005; Sung, Chao and Tseng, 2016). These differences have to be explored, including differences between cognitive abilities and mindsets.

2.8.1 Academic and cognitive ability

There is conflicting evidence that exam stress is linked to academic ability. For example, academically high achievers with a history of doing well were likely to be less test anxious (Chamberlain, Daly and Spalding, 2011). In contrast, Sung, Chao and Tseng (2016) reported that high achievement students had higher test anxiety, supporting the motivation enhancement model. In fact, this study found exam stress was highest in moderate level learners. This was reported to be linked to the uncertainty of their futures but still carrying expectation and pressures (Sung, Chao and Tseng, 2016). In summary, Conley (2012) identified that exam stress is seen across all abilities but may be due to different reasons.

Research has shown associations between emotional intelligence, coping, personality and exam stress in students (Austin *et al*., 2010). Emotional intelligence was viewed positively and reduced exam stress, as did emotion-focused coping. Emotion-focused

coping was associated with stress management as well as general mood and intrapersonal skills subscales (Austin *et al*., 2010). Task-focused coping was associated with social diversion and adaptability but not linked directly to stress coping. It was surmised that these skills may support a person to cope with exam stress (Austin *et al*., 2010).

2.8.2 Differences in mindsets

Another area of individual difference is that of mindset and motivation. Motivation can be used to employ coping strategies in pursuit of certain goals. Dweck's theory of mindsets (1986) addressed intrinsic and extrinsic sources of motivation and how these promote action. Intrinsic motivation is the desire to become knowledgeable and skilled in something, while extrinsic motivation is related to attaining good grades, for example (Dweck, 1986). If two students employ differing strategies, they may end up performing differently as a result (Rosenzweig and Miele, 2016). A performance or goal-oriented standpoint was suggested to increase levels of stress in comparison to those who are less goal-oriented (Aherne, 2001).

Dweck's mindset psychology informs us that some focus on advancement and personal growth (mastery), while others aim to preserve safety and security (Putwain and Symes, 2012; Rosenzweig and Miele, 2016). Growth mindsets were responsible for viewing goals as ideals: a process of moving closer to this goal over time (Rosenzweig and Miele, 2016). Having a mastery mindset has been shown to affect competence beliefs and the levels of exam stress experienced (Putwain and Symes, 2012). In contrast, safety through performance-based mindsets were predominantly prevention-oriented: these individuals viewed goals as responsibilities and felt they must protect against potential threats to these responsibilities by performing well

(Rosenzweig and Miele, 2016). External exams were bigger threats to safety than the students had experienced before, creating a higher state of anxiety then previously experienced.

It is important to understand these individual differences as it may influence the ways to support those who experience higher levels of exam stress (Putwain, 2009b). Robson *et al*. (1995) clarified that the origins of stress may be distant, obscure and even subconscious, making it hard to identify vulnerable groups, or ways to support such students. To help understand the individual differences between students, theories such as Achievement Goal Theory (Elliot and McGregor, 2001) have been suggested within exam stress research. Achievement Goal Theory (AGT), with its focus on goal-oriented mindsets, may be able to explain how or why some cope with exam stress, whilst others are less able to do so.

2.9 Achievement Goal Theory

2.9.1 Background

Dweck's work influenced psychological thinking about individual difference in relation to mindsets and how people set themselves goals. Many theories have been produced to further explain how and why people set goals. Goal orientation theories refer to 'goals' as broad orientations in learning (Cook and Artino, 2016). Performance goals and mastery goals lead to differing learning behaviours or approaches (Cook and Artino, 2016). Goal orientation theories, such as AGT, are used to explain achievement behaviour and are therefore applicable for understanding and improving performance in a range of settings, most commonly cited is within sport (Chiung-Huang, 2013) and in academia (Dull, Shleifer and McMillan, 2015).

Dweck and Elliot (1983) identified that a student whose purpose is to learn and understand will think and act in different ways to a student whose purpose is to look smart and get a good grade, and to a student who is trying to avoid looking stupid (Conley, 2012). Elliot and Church (1997) proposed a mastery-performance goal dichotomy, and it has since been revised to include the approach-avoidance motivation elements, as seen in (Figure 1.).

Figure 1. 2x2 Achievement Goal Theory (Elliot and McGregor, 2001)

		Definition	
		Absolute/intrapersonal (mastery)	Normative (performance)
Valence	Positive (approaching success)	Mastery – approach goal	Performance – approach goal
	Negative (avoiding failure)	Mastery – avoidance goal	Performance – avoidance goal

Achievement Goal Theory is a social cognitive theory of motivation (Pintrich and Schunk, 2002): it describes and explains achievement behaviour (Dull, Schleifer and McMillan, 2015). This 2 x 2 framework incorporates the dimensions, ‘definition’ and ‘valence’. These are both crucial parts of the ‘competence’ construct and can be viewed as necessary components of achievement goals and action (Elliot and McGregor, 2001). Achievement goals relate to wanting to “develop, attain and demonstrate competence” (Dull, Schleifer and McMillan, 2015, p. 154). Although the roots of this framework came from sport motivation and performance research, AGT is one of the most widely researched motivation frameworks in educational psychology (Conley, 2012). More recently it has been expanded and used within other models to

further explain individual difference in performance situations, such as exams (Conley, 2012; Madigan, Stoeber and Passfield, 2017). Associations have been made to Self-Determination Theory (Deci and Ryan, 1985) as goal orientation can be used as a predictor of levels of self-determination (Ntoumanis, 2001). Performance goals were associated with low self-determination, an adaptive role of task orientation in facilitating self-determined motivation (Ntoumanis, 2001). This is therefore of importance and indicated the significance of AGT on our understanding of motivation.

Prior to Elliot and McGregor's model (2001), it was generally agreed that performance goals should be split into approach and avoidance components (Conley, 2012). The newer introduction of the split in mastery goals suggests two more types of mindset; mastery-approach and mastery-avoidance. While mastery-avoidance is a relatively new addition to the dichotomy of mastery and performance (Elliot and McGregor, 2001) it elaborates on the previous work (Dweck, 1986) and expands our understanding of goal motivation. This addition is therefore of great value and there is substantial research evidence that this additional element is needed (Sideridis, 2007).

2.9.2 Research supporting Achievement Goal Theory

AGT explains the different ways in which people perceive events and their resulting actions, based upon what they wish to gain from an event (Elliot and McGregor, 2001). In relation to school work, for example, one is likely to be either focused on performance goals or mastery goals (Chiung-Huang, 2013). Within this dichotomy, one can be avoidant of failure, or approach-driven in order to achieve these goals (as seen in Figure 1. See section 2.9.1). Depending upon one's goal mindset, one is likely to be affected by exam stress to varying levels (Elliot and McGregor, 2001).

2.9.2.1 Performance and mastery mindsets

People who apply a performance mindset have a self-theory that intelligence may be a fixed trait (similar to Dweck's fixed mindset), resulting in low-effort successes being viewed positively as it encourages continued study as the person feels smarter (Cook and Artino, 2016). However, effortful tasks and poor performance may be interpreted as low ability and can lead the person to disengage, to avoid failure in the future (Cook and Artino, 2016). In contrast, a mastery mindset leads a person to seek opportunities that will make them smarter. Challenge is sought as it will stretch and increase their knowledge and performance: a more fluid concept of ability (Cook and Artino, 2016). Mastery goals were associated with positive affect and less negative affect (Conley, 2012). Research suggested mastery goals facilitated self-confidence and lessened the cognitive factors of state anxiety (Chiung-Huang, 2013).

Traditionally, a single-goal mindset model was used, where an individual would be either mastery or performance driven, but more recently there has been recognition that multiple perspectives of achievement goals are likely (Conley, 2012). Achievement goals were dispositional and situational, so individuals rarely displayed a single goal across all scenarios (Conley, 2012). There has been exploration into the achievement levels of those with differing goals: Pintrich (2000) suggested different cognitive and affective experiences led to multiple goals and this may be influenced by the achievement levels of those students. However, it has been found that goals were shared across different ability groups (Conley, 2012), indicating that performance goals may have been beneficial to some individuals but not others. The author summarised that more research is needed to identify the differences more clearly.

2.9.2.2 Approach and avoidance goals

The AGT framework separates the performance and mastery mindsets into approach and avoidance goals (see Figure 1.) (Elliot and McGregor, 2001). Some seek opportunities to make themselves look good (approach) while others seek to avoid looking bad (avoidance) (Cook and Artino, 2016). Avoidance was consistently associated with low achievement and other negative outcomes, such as disengagement (Cook and Artino, 2016). Avoidance tended to increase negative affect (Conley, 2012) and other maladaptive outcomes (Dull, Shleifer and McMillan, 2015). Avoidance goals were demonstrated through a fear of failure (Hall *et al*., 2004): a concept related to fear appeals used by staff to increase performance (Daniels and Poth, 2017). Both performance-approach and performance-avoidance were viewed as less desirable than mastery mindsets which encourage interest and deep learning strategies (Cook and Artino, 2016). That said, performance-approach goals are consistently associated with high achievement (Cook and Artino, 2016) so should not be discounted completely. This research suggested that the avoidance mindset was the cause of difficulties, rather than simply performance goals, as previously evidenced (Dweck, 1986).

While much of the initial research suggests mastery goals are the ideal (Elliot and McGregor, 2001), mastery-avoidance goals have been shown to be predictors of disorganised studying and anticipatory exam stress (Cook and Artino, 2016). Mastery-avoidance goals were associated with elevated cognitive anxiety, negative affect and a fear of failure (Sideridis, 2007). This was a more negative pattern than mastery-approach goals but more positive than performance-avoidance goals (Elliot and McGregor, 2001). It was therefore suggested that avoidant motivations in the goal dichotomy were dysfunctional forms of regulation (Chiung-Huang, 2013).

2.9.2.3 Achievement Goal Theory and exam stress

Stress and anxiety are often presented as maladaptive outcomes that are to be avoided (Cook and Artino, 2016). There is research evidence that the AGT framework can be used to explore exam stress: it was suggested that a combination of both mindsets (performance and mastery) had better outcomes in terms of grades, but importantly, may not reduce dysfunctional outcomes such as stress (Dull, Shleifer and McMillan, 2015). It was reported that the highest levels of anxiety were seen in the multiple-goals group (Dull, Shleifer and McMillan, 2015). There was no significant difference between mastery and performance clusters, so the difference was described to be due to the avoidance rather than the goal attribution (Dull, Shleifer and McMillan, 2015). It was suggested that almost half the variability in cognitive anxiety can be explained by goal orientation and that both mastery- and performance-avoidance goals significantly elevated anxiety (Sideridis, 2007). Mastery-avoidance actually increased stressful arousal more than performance-avoidance (Sideridis, 2007), indicated by increased heart rate in test situations.

The two avoidance mindsets have been interpreted as a fear of failure (Dull, Shleifer and McMillan, 2015), which is reported to lead to maladaptive (undesirable) outcomes, such as stress. This is most commonly the case in situations where failure is viewed as a real possibility, such as in exams (Dull, Shleifer and McMillan, 2015). However, this could be contained or limited by views of self-efficacy: a belief in one's ability to accomplish something, leading to achievement motivation (Dull, Shleifer and McMillan, 2015). This introduction of the concept of self-efficacy (Bandura, 1993; Putwain, Remedios and Symes, 2016) indicates the complexity of goal and mindset selection. Self-efficacy was suggested as having a vital role in the learning process and it can influence goal orientation, performance and wellbeing (Ntoumanis, 2001). It may also

add a regulating factor to the susceptibility to exam stress, regardless of goals and mindsets (Putwain, Remedios and Symes, 2016).

2.9.3 Critique of Achievement Goal Theory

Understanding motivation is critical for improving school practice, in relation to exam preparation and increasing levels of student attainment (Conley, 2012). It is also essential to improve student wellbeing, both directly and as a consequence of better performance and life-long outcomes associated with academic achievement (Conley, 2012). AGT offers a framework to guide research to look at motivation and mindsets in relation to performance (Elliot and McGregor, 2001). As a result, AGT has been one of the most widely researched motivation frameworks in educational psychology (Conley, 2012).

Despite the support for Elliot and McGregor's (2001) framework, there is critical analysis too. Within their paper, there is an assumed causal relationship between the mindset and performance, but it can be argued that it may be over-generalised to say so. The research findings and conclusions were based on correlational results and were therefore not absolute, restricting the level to which these findings can be generalised. More recent research has tried to overcome this by using a variety of samples, measures and analyses (e.g. Conley, 2012; Cook and Artino, 2015).

While it is suggested that the links to other theories (for example, Self-Determination Theory; Deci and Ryan, 1985) is a strength of this framework, it also identifies the gaps. Other theories explain other aspects of goals, such as factors that assist goal setting and content (Cook and Artino, 2016). Some goal orientation theories explain goal setting and goal content: for example, Ford (1992) identified 24 common goals that were categorised as within-person goals and goals dealing with interactions between

people and the environment. AGT does not identify goal setting or content as part of its model and therefore other theories are needed to be incorporated or used to address these factors.

It was apparent that there was no 'ideal' mindset in terms of affective or achievement outcomes (Conley, 2012): multiple goals appeared equally adaptive in relation to wellbeing and achievement. It can be concluded that achievement goals were insufficient in explaining the range of motivational profiles available and how these affect levels of achievement or stress (Conley, 2012). Putwain and Symes (2012) discussed the role that competence beliefs had on exam stress, and how these beliefs interacted with mastery and performance goals: this is an additional factor not considered as part of the AGT framework.

The framework noted that mastery goals can also be split into approach and avoidance motivations, and that mastery-avoidance is worse than performance-avoidance in terms of increased anxiety and stressful arousal (Sideridis, 2007). While this finding was interesting, it suggests that avoidance is a larger predictor of stress than the original goal dichotomy (Sideridis, 2007). These findings question and contradict the initial research in this field, and further evidence may need to be sought.

2.9.4 Practical implications

The supporting research and the AGT model have practical implications. While multiple goals seemed to improve academic outcomes, high levels of anxiety were also experienced (Dull, Shleifer and McMillan, 2015). This might be because the students' endorsement of performance goals out-weighed the mastery goals. There appears to be an optimum goal system for achievement (multiple goals) and a different one for reducing negative affect, e.g. stress (mastery) (Dull, Shleifer and McMillan, 2015). This

is therefore complicated and presents a challenge to educators, who need to apply the right goal strategies in the right quantities. Complete absence of stress may reduce motivation to achieve (Dull, Shleifer and McMillan, 2015), whereas early success and therefore higher expectations alongside mastery could result in achievement without too much stress being experienced. Educators need to be informed of this balance and given strategies to use within their teaching and when supporting students who face important exams.

2.10 Conclusion

Within the literature review, the terms ‘test anxiety’ and ‘exam stress’ were explored. This highlighted the identification of overlap and confusion within the existing research (Putwain, 2008b). There is a need for clarity about what is being explored, so this project explicitly and clearly defined ‘exam stress’ and aimed to investigate it, through the perceptions of students who had recently had exams.

The previously published literature commented that exam stress influences individual achievement with knock-on implications for teacher and school performance. Equally the school pressures to perform nationally is shared with teachers and students alike, increasing exam stress (Denscombe, 2000). It was shown that exam stress is experienced throughout the UK education system, particularly when faced with external exams, such as GCSEs (Putwain, 2009a).

Some of the research evidenced the effects of exam stress on wellbeing and academic performance. Stress generally, and situational stress such as exam stress, can have implications for short-term and long-term health and wellbeing. This has been identified and shared in this literature review, although much of the research that has been undertaken has been quantitative. While this has enabled an understanding to be

gained, there is a gap in the existing literature: qualitative research methods need to explore the effects of exam stress as it may indicate nuanced individual differences (Putwain, 2007b). Similarly for the effects on performance: stress has been understood to impact performance, but nuanced differences have been cited where some benefit from low levels of stress. These findings indicated a variety of experiences and encourages qualitative exploration in order to gain an understanding of individual differences.

The published literature commented on the internal and external sources of stress that may then be interpreted or dealt with differently by individuals. Cognitive ability, gender and mindset have been explored in relation to exam stress and coping with stress. In addition, numerous models and theories have been utilised by research, to explain exam stress variability in individuals.

Achievement Goal Theory (Elliot and McGregor, 2001) is described in detail and supported by research from within the research field of exam stress. A person's mindset and goal orientation has been identified as affecting academic performance, coping with stress and maintaining wellbeing. As such, the model can be used to explore exam stress to understand why some may be more susceptible to it and why some can cope with levels of stress. This is of importance to school staff so that vulnerable students can be identified, support can be put in place, systems can change regarding exams and both wellbeing and performance can be improved.

Having conducted this literature review, it was apparent that there is limited qualitative research addressing exam stress and individual differences (Putwain, 2007b). Therefore, this research aimed to contribute to the existing literature by using qualitative methods. In addition, the work of EPs highlights the importance of

student/child's voice and a person-centred approach. As such, this research aimed to give voice to those who have experienced exam stress, to allow us to understand more fully what it was like for them. By doing this carefully in accordance with robust research methodologies, much can be learnt (Thomas, 2009).

This research, in response to the potential gaps in the existing literature and in response to what has already been learnt, has been guided by the AGT model. This model has been applied to exam stress previously and the results of this research aimed to support the previous findings. In addition, by using this model, it was hoped that the effects of exam stress could be more fully understood, identifying vulnerable groups and ways to support students in the future.

CHAPTER 3: METHODOLOGY

3.1 Introduction

The aim of this research was to explore the views of students who had recently taken GCSE exams. It aimed to investigate their views in relation to their preparation for exams, the stress they felt in association with their exams, their wellbeing and exam performance. The research questions were as follows:

- How do Year 12 students feel their GCSE experiences affected their wellbeing and performance?
- What factors contributed to, or alleviated, levels of exam stress (personal, social and educational)?
- Can theories, such as Achievement Goal Theory, be used to explain the individual differences in levels of exam stress?

In this section, the research philosophy and analytic method are described. The methodology is explained as a qualitative, case study design. The procedure is given for both phases of the research: (1) the online survey and (2) the semi-structured interviews with young people. This section describes the questionnaires and interview procedures used in the research and the analytic process; Interpretative Phenomenological Analysis (IPA). In addition, ethical consideration is discussed: it was focused on working with young people in accordance to the guidelines set out by BERA (British Educational Research Association, 2011).

3.2 Research philosophy

Social science research is underpinned by philosophical assumptions (Denscombe, 2010). These assumptions are intrinsically linked to the style of the research, methodologies and often, the conclusions of the research. As a result, ontology and epistemology need to be considered, as does the research paradigm. Thomas (2009) suggested that deep consideration of the questions being asked and how to answer them is required.

Ontology is the study of existence: the study of what we are looking at, what it is and what is occurring. One may take a 'realist' position to answer these questions. This depicts that beliefs are formed from reality (Burr, 2003). This implies beliefs are 'testable' and a realist stance aims to give answers to events or occurrences in the world. This realist perspective is argued to give psychology a more secure scientific basis (Harre, 1974). In contrast, a 'relativist' position argues that reality does not exist per se and that beliefs are formed by experiences. These experiences are used to create representations of the world (Burr, 2003). When an event occurs, it is experienced by those who are present to it. The event formed their beliefs and we can learn from these beliefs about the event and future events. Research that adopts this position aims to understand people's experiences, but also inspect hermeneutics: the way in which particular meanings are produced by the occasion.

The current research applied the perspective of social constructionism, which can be described as between these two pole positions (Thomas, 2009). Social constructionism is based on the belief that a measurable and quantifiable objective world does not exist; therefore knowledge, truth and reality can never be truly known, similar to relativism (Pring, 2004). Applying this position allows one to understand how

people construct knowledge and how it becomes a taken-for-granted reality (Andrews, 2012). Implied in its name, social events and discourses built within groups help solidify knowledge over time, and the constructions of reality grow stronger (Hammersley, 1992). Exploring these constructions and how they came about allows for research to gather an insight into the changes over time, and differences within societies (Andrews, 2012).

This position was chosen for this research as it gathered people's experiences to learn about the specifics of a phenomenon. It allows an understanding to be gained from what it was like for individuals, whilst encouraging analysis, and sense-making of the phenomenon (Smith *et al., 2009)*. Through the interview process, it was possible to understand the students' perceptions and ask what was happening. In this instance, how were the exams experienced and whether they caused stress. This produced a rich picture of information from those involved that hoped to lead to a better understanding (Thomas, 2009). However, realists would question whether this research has purpose. The approach prevents the manipulation of events and variables from which to learn. Realists would argue that by merely observing a phenomenon we are not learning a great deal (Harre, 1974). However, social constructionists emphasise the need to conduct research within a person's reality in this way. This is because the interpretations made from this, gives voice and allows understanding from an individual's perspective (Cresswell, 2009).

As well as an ontological position, the current research took an epistemological stance. Epistemology is the study of our knowledge of the world (Thomas, 2009). Social constructionism suggests there is no absolute truth, but that it is constructed through experiences over time (Burr, 2003). Gergen (1985) emphasised that people construct the world between them, through talking about it and experiencing it. This stance has

implications on how to research the world, as it encourages a phenomenologically-focussed approach to the interpretations of accounts (Larkin and Thompson, 2012). Knowledge is culturally and historically specific, upheld through social processes (Gergen, 1985). It is therefore possible to question knowledge in order to understand how these beliefs have been constructed over time and how they impact on individuals. The current research, in line with constructionism, aimed to understand people's beliefs and perceptions of exams, make sense of exams from their point of view and understand the uniqueness of each individual's experiences (Smith *et al.,* 2009).

Encompassing these philosophical positions, an interpretivist paradigm was used in this research: the application of interview, case study and observation to contribute to theory (Thomas, 2009). People's constructs and their views of a phenomenon (exams) were interpreted to recognise patterns in thoughts, feelings and behaviours. More specifically, interviews allowed the research to explore social influences upon the phenomenon, analysed as qualitative information involving the interpretations of the researcher (Scotland, 2012).

This research recognised, by using interpretivism, that all information is valid, regardless of the source. Moreover, specific accounts inform each other so a web of understanding can be exposed, within a specific situation (Thomas, 2009). This paradigm allowed for the researcher's position, knowledge and experience to contribute and be taken into account. For example, exams may have been viewed by the students as onerous and stressful, whereas my view was that they serve a purpose in later life. Through careful reporting of these views, a collective understanding and meaning can be gained, using hermeneutic exploration of meaning and sense-making (Langdridge, 2007). Most importantly to this paradigm, it avoided fracturing or breaking apart the social world: it recognised that all things interact and must be viewed as a

whole. This is not the case in a positivist orientation, where variables are controlled or measured separately.

This different view leads to criticism of interpretivist research. Positivist researchers would argue that quality research needs to be testable and repeatable (Thomas, 2009). As discussed this was not the aim and is not possible with interpretivist methods. Similarly, because of the methods used, there was an influence of researcher bias, due to the contributions of the researcher and information collection methods (e.g. interviews, observations). Similarly, there was no control of variables, so any findings will not be objective, but subjective (Atkins and Wallace, 2012). These criticisms argue that the research is not thorough and balanced as a result (Harre, 1974). However, these are recognised by interpretivists and promoted as a strength rather than a weakness. Research as an activity is governed by rules of balance, fairness and thoroughness, regardless of approach (Thomas, 2009). This research was all of these regardless of the methods used, and thus, trustworthy and of value (discussed in more detail in section 3.9). This paradigm was also preferred as it offers humility for a practitioner-researcher: there are no grand claims or generalisable ‘facts’ being found (Thomas, 2009). In this instance, the research aimed to develop the practice of those involved and support understanding.

3.3 Design

This research utilised qualitative methods to collect views from a number of sources; teaching staff and Year 12 students. It was designed as a case study. The case study was a single school within one local authority, but information was gathered from a number of sources within the school. “Case study is an in-depth exploration from

multiple perspectives of the complexity and uniqueness of a particular project, policy, institution, program or system in a 'real life' context" (Simons, 2009 p. 21). The school was the subject of the research and the students and staff gave their perspectives of the system.

There is no set methodology within qualitative research (Thomas, 2009), e.g. discourse analysis, action research, ethnography, etc. This research used a range of methods. Phase one of the research used an online survey, which combined the collection of data and opinion from school staff. Phase two (the main part of the research) involved semi-structured interviews with six students from within one school, who have just been through the GCSE process.

Qualitative research, such as this, attempts to capture an understanding of a specific situation and the way people view that situation (Bannister *et al*., 1995). It is an exploration, elaboration and systemisation of the significance of an identified phenomenon (Bannister *et al*., 1995). It is this meaning- and sense-making that brands the research worthwhile in expanding our understanding.

There are criticisms of case study research. For example, the role of the researcher is questioned. It was commented that the researcher is part of the research and their role is critical in accessing information and the interpretations of a phenomenon (Thomas, 2009). This may lead to bias and inaccurate interpretation. However, qualitative research is an interpretative exploration of a specific issue in which the researcher is central to the sense that is made (Bannister *et al*., 1995). As such, it is recognised that the researcher is part of, and included within the research (Thomas, 2009). Further criticism was commented on by Gorard (2013, p. 13), who concluded that "something like case-study will always tend to be the least convincing design" because of its

passivity and lack of control. However, an interpretivist would defend case study design because the person's reaction to the real world should be incorporated within the study. It would be impossible to try to remove or control for this, as it would not then represent the real world. Different to quantitative research, the study could not be replicated as it only applies to the subjects at a given time, but the results are no less valid. This is because the results indicate a position at the time that may have meaning or similarities with others in similar situations.

3.4 Procedure

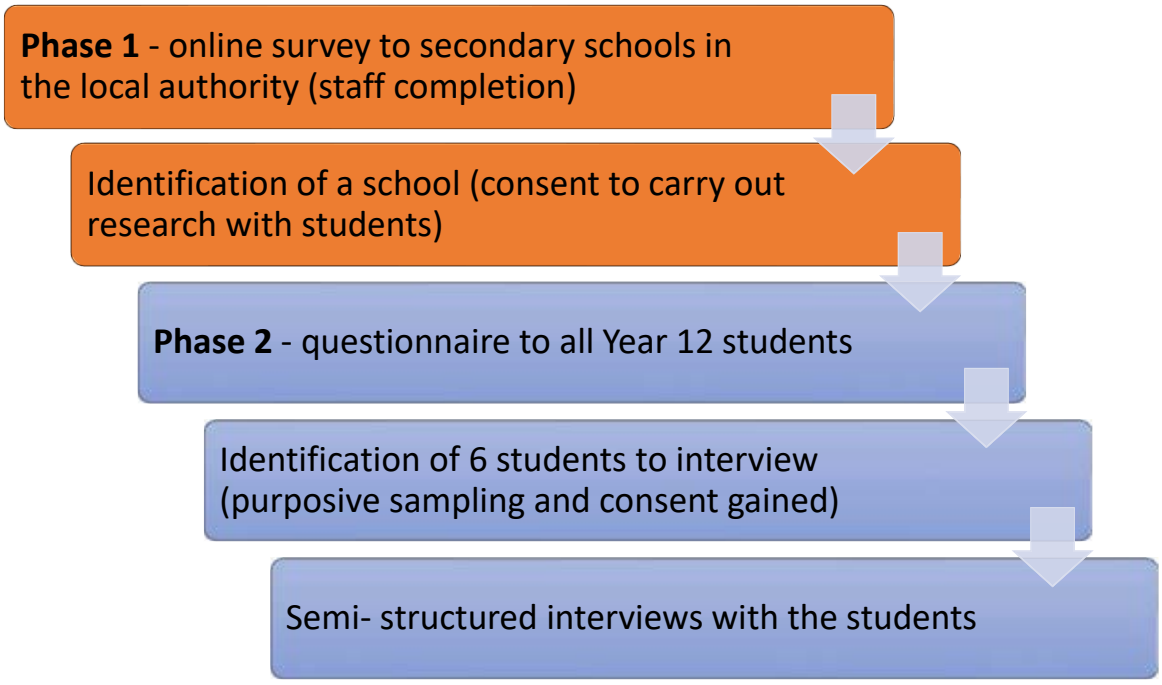
The research took part in two phases (see Figure 2.). Phase 1 comprised of an online survey which was sent to all secondary schools in the local authority (see Appendix 5.). This survey aimed to gain an understanding of the context in which the research took place in terms of predicted grades, school exam data and student numbers. The surveys were to be filled in by a member of staff (usually the Head of Year 11) who had access to the required information. Data regarding GCSE results were collected as was the percentage of children to attain their predicted grades. As part of the survey, opinion was sought regarding exam stress and support for students to help with exam preparation, performance and wellbeing. The collection of staff views of the phenomenon aimed to contextualise and give background to the situation that would then be explored in detail as part of phase 2.

The second phase took place within one secondary school. A questionnaire was given to all the Year 12 students in the Autumn term (see Appendix 5., p. 199). They had taken GCSEs and had received their results prior to starting Year 12. This questionnaire enquired about their exam results and also explored their views about

their preparation for exams, wellbeing during the exam period and their results. From this survey, it was possible to sample the cohort based on their academic achievement and their perceived levels of stress during their exams. These two factors were important to the sample: a mix of ability and stress level was identified.

Purposive sampling was used to identify six students across a range of attainment levels, based on their GCSE results, and a range of levels of stress. These students were approached by school staff and invited to take part. Informed consent was gained and information was sent home to inform parents of the research. Once consent was gained, the students took part in semi-structured interviews. These were approximately 45 minutes long and were conducted in school by the researcher. The interview script and example transcripts can be found in Appendices 5. and 1. respectively.

Figure 2. The design procedure of the research



3.5 Surveys and questionnaires

Surveys and questionnaires are a useful data collection tool and allow relatively quick and simple numerical and qualitative data to be collected (Cohen *et al*., 2011). Questionnaires are cheap to administer, often straightforward to analyse and do not rely on the presence of the researcher to administer (Wilson and McClean, 1994). Online surveys similarly, provide a method of accessing information from a number of sources with ease and efficiency (Thomas, 2009).

Robson (2011) suggested that questionnaires aid the achievement of research aims and contribute to the answering of research questions. It is important however, that surveys and questionnaires are easily accessible for the participants, so they can understand the questions in the manner that the researcher intends, which is harder to ensure than face-to-face methods of researching (interviews, for example). Other limitations associated with self-report questionnaires are based on the time taken to develop and receive responses, and the limited flexibility of response (Cohen *et al*., 2011). One issue that was identified is that online surveys are susceptible to low response rates unless given to informed, targeted individuals or groups. In this research, response relied on the good will of school staff to respond: in view of the fact that the research topic was likely to be of interest, it was hoped that a good response rate would be seen.

3.6 Semi-structured interviews

Semi-structured interviews were used with the young people following purposive sampling. A semi-structured interview is a discussion with a purpose, a conversation

which involves the giving and receiving of information; fact, opinion, or both (Thomas, 2009). These were conducted in the school with the researcher. They were audio recorded so that they could be later transcribed. Being face-to-face, the spoken words were recorded, but it also gave the opportunity for intonation, body language, demeanour, and emotion to be recorded through note-taking during the interview. This additional information is important in IPA analysis (Smith, Flowers and Larkin, 2009). Rapport building at the beginning was important so that the interviewee felt relaxed and were able to give honest answers during the interview (Thomas, 2009). Being qualitative, it was important to explore opinions in detail, through the use of open questions, pauses and reflection: this was an activity in which both the interviewer and interviewee took part (Smith, 2004).

The benefits of a semi-structured interview were to give the opportunities to explore a pre-defined list of issues (Thomas, 2009). There were specific questions to be discussed, but not too rigidly so that the interviewees had the freedom to explore them in more detail. Careful redirection was needed if the conversation moved away from the research questions, but not to restrict the collection of important views. This relied on the skills of the interviewer to recognise how and when this was needed (Thomas, 2009). There was a balance between a structure to explore key ideas based on theory, literature and prior expectations, and also a semi-structured interview so information was given freely by interviewees and followed up (Thomas, 2009). The interview questions were informed by the literature in order to capture information relevant to the research questions (e.g. *Motivated Strategies for Learning Questionnaire (MSLQ);* Duncan and McKeachie, 2005) (See Appendix 5.).

To conduct the interviews, open questions and follow up questions were used to encourage elaboration. Probes were used as a way of encouragement to the

interviewees, allowing them to expand: these were verbal and non-verbal (Thomas, 2009).

As indicated, there was a requirement for the interviewer to be skilled in gauging and leading the interviews. This is a criticism of semi-structured interviews that a more structured schedule would overcome. Similarly, any form of interview with young people needs careful consideration. There was a risk that a one-to-one interview like this would restrict discussion and communication from the young person, regardless of the rapport building at the start (Thomas, 2009). To address these issues, the inter-personal and communication skills required of the interviewer determined the overall success. In the current study, information was shared with the young people so they could consider and recall ideas and think about some of the content that might be discussed in advance. Another consideration in this instance, was that students were being asked to recall events from a few months before. This may have influenced the detail of the information being shared and the emotions attached.

3.7 Participants

The participants were selected from within a mainstream secondary school from the local authority in which I was on placement. Purposive sampling was used to select students in Year 12. These students had taken GCSEs the previous year and received their results in the summer (2017). All six students were selected from one school. To meet the inclusion criteria, the students had to be attending the school 6th Form and have had their GCSE results. Further to this, the sampling included students from a range of achievement levels; high, average and low achieving in relation to other students in the school, based on attainment results at GCSEs.

This sampling and resulting selection of pupils had limitations. For example, it was only investigating those students who achieved GCSE grades and continued in education. There were likely to be some students who did not fall into this category, e.g. those who left school and entered work placements. The purpose of choosing students still in school was so that school practices may be improved for these students for future exams and for other students who will also be taking GCSEs in future. Also, the sampling was based on predicted grades, which were made by the school staff in response to the students' previous assessment and test performances. The accuracy of these predictions could be questioned (The Guardian, 2013). However, schools are proving to be accurate in their assessments, largely due to the accountability for these predictions in terms of school performance and teacher performance related pay (Stankov, and Lee, 2014). As such, it was assumed these judgements would be accurate for the purposes of this research and sampling method.

3.8 Analysis: Interpretative Phenomenological Analysis

3.8.1 Rationale for IPA

Using IPA enabled an inductive nature of research, capturing the lived experiences of the students and facilitating their thoughts and feelings to be shared (Pietkiewicz and Smith, 2012). This is in line with the social constructionist research approach of the research. In addition, IPA allowed analysis to occur at varying levels, beginning as individual participants and then as a collective. This enabled the voices and views to be kept as part of the findings, and reported upon, giving authenticity and value to the conclusions (Smith, 2004). Also, the interpretivist philosophy of IPA enabled both the researcher and the participants to be part of the analysis. This captured the value of

the participants' interpretations of their experiences and allowed this to be portrayed in the findings. In addition, it is a suitable analytic approach after gathering retrospective views of a particular event or phenomenon, and suitable within a case-study design (Pietkiewicz and Smith, 2012).

Critically, using IPA to analyse the transcripts enabled conceptual understanding to be gained, which other methods may have missed. The AGT framework to explain individual difference was included and some of the interview questions related to this. Use of IPA meant that conceptual information, as well as descriptive information, was gathered and reported.

3.8.2 Theoretical background

Interpretative Phenomenological Analysis (IPA) is an explorative analytic tool, which applies a bottom-up approach to find information (Pietkiewicz and Smith, 2012). It is not a prescriptive method and therefore allows for exploratory research questions to be answered, as well as more specific, theory-based questions (Smith *et al.,* 1999). Its origins are in the field of Health Psychology, but is now widely used as a qualitative analytic approach across diverse topics within psychology (e.g. Smith, Flowers and Larking, 2009). The strategies of IPA differ to other qualitative approaches, but shares epistemological, theoretical and methodological emphases (Smith, 2004). It is categorised as a case-study approach as it is used with small sample sizes and in-depth analysis to understand a particular situation (Thomas, 2009).

To define IPA, the 'interpretative' element describes the way that meanings are constructed based on what is being reported. The process involves double hermeneutics: both the participant and the researcher interpret the participants'

meaning of the phenomenon (Langdridge, 2007). This acknowledges and recognises researcher bias (Smith *et al*., 1999). Recognising the central role of the analyst connects IPA to the interpretative and hermeneutic traditions (Palmer, 1969). 'Phenomenological' refers to the imposition of meaning on experiences, situated in context (Heidegger, 1962). Importantly, IPA encapsulates the experiences and the context, recognising the unique and often nuanced information, gathered through the use of practical and accessible guidelines (Smith *et al*., 2009). The quality of the outcome is based on the level and skill of personal analytic work, which Smith emphasised by commenting, "one cannot do good qualitative research by following a cookbook" (Smith, 2004, p. 40).

IPA, like other qualitative analytic tools, examines the personal experience of individuals with a focal point that is significant to them, such as exams (Smith *et al*., 2009). IPA looks "in detail at how participants talk about the stressful situations they face, and how they deal with them, and by close consideration of the meanings they attach to them" (Smith *et al*., 2009, p.21). IPA recognises the diverse, complex and nuanced nature of qualitative information so aims to present and discuss generic experiential themes across participants, paired with the researcher's own interpretations (Pietkiewicz and Smith, 2012; Van Manen, 1990).

3.8.3 Implementation of IPA

To begin the process of IPA, purposive sampling is used to identify individuals from a defined group with a shared situation or phenomenon and therefore who are likely to shed light on the research questions (Brocki and Wearden, 2007). It is an idiographic approach where thorough and detailed analysis of a case is carried out to attempt to understand a phenomenon from the point of view of that person, followed by other

cases which are later combined in a small sample (Smith *et al*., 2009). Themes can emerge as a result of people sharing a similar phenomenon, whilst individual voices are maintained (Smith, 2004).

Critical to IPA is the role of the researcher, who is very much part of the analysis and research. The researcher elicits views via an inductive process, but within the loose constraints of the interview schedule. Importantly, the researcher is able to reflect with the participant: an active procedure between the pair to create an analytic story (Brocki and Wearden, 2007). It is recognised within the IPA process that the participant is the expert of their experience. However, it also allows the researcher to include a distinctive psychological angle (Smith *et al*., 2009). Delving deeper in the particular (of one person's experiences) allows closer understanding and interpretation of the universal (Warnock, 1987). The researcher is in a position where they can think about how others might deal with the particular situation.

Critique has been raised about the use of IPA with younger participants, or those without the language or understanding to undertake such a demanding reflective process. In response, Smith (2004) emphasised that the quality of the account is more likely to be linked to the importance of the experience and event being discussed and the engagement the participant feels. That said, there is recognition that researchers may need to support the process for certain groups more than a standard semi-structured interview (Smith, 2004). It is expected that one can use professional experience to help modify existing protocols when collecting data.

The 'analysis' part of IPA involves a process of reading and rereading transcripts of the interviews. After initial noting, it is hoped that emergent themes develop. From these themes, connections may be made and patterns seen across cases. Throughout

this stage, the cases remained distinct and the interpretation was left until later. This means that any resulting claims from the research were grounded in, but go beyond, the 'surface' of the data (Braun and Clarke, 2006).

There are different levels to the analysis within each case and when identifying themes across cases. One can begin by looking closely at the content of the words spoken through the interview process (Langdridge, 2007). Constructs and ideas will be drawn out and shared (Smith, 2004). For example, a participant may use a complex set of social comparisons to describe themselves, indicating a level of self-esteem and self-worth in relation to others. The researcher can then focus further on the way this was spoken about and elaborated. The words used and the hermeneutic exploration (Langdridge, 2007) of events may further indicate a lack of self-esteem: through metaphor, for example. From this position, it is expected that the researcher's skills and psychological knowledge will assist in the interpretation of the words spoken, possibly drawing upon psychological theory (Smith, 2004), whilst remaining grounded to the participant's words and experiences. An example of this can be seen in the Appendix. 1.

Following the flexible guidelines of Interpretative Phenomenological Analysis (Pietkiewicz and Smith, 2012), a number of steps were taken:

Table 2. Procedural steps of IPA

Steps of IPA	Examples
1. Some interpretation and clarification of comments during interviews with the participants, allowing their interpretive contribution	*Student*: "It was definitely worse as we got nearer the exams" *Researcher*: "Right ok, and what about in the exams once you got in?"

	Student: “Yes, when I first picked up my pen, I was shaking”
2. Listening to recorded interviews and carry out transcription, record the notes taken during the interview pertaining to the student interpretation and initial thoughts	n/a
3. Note-making of student transcript	“I was so scared… I remember reading the first question and thinking ‘I don’t know what that means’” - Symptoms of anxiety; panic, scared. High emotion (stress)
4. Pertinent quotes highlighted and numbered with further note-making	“I felt like there could have been more support in certain areas… I’m not just going to sit there and suffer” - Wanted more support, felt stressed - Indicated approach mentality
5. Emergent themes identified from notes and quotes	Too much pressure from staff to perform Support was interpreted as pressure
6. Repeat previous stages with other student transcripts	n/a
7. Clustered themes grouped across participants	Lack of support for wellbeing Pressure from oneself to achieve
8. Pertinent quotes identified to evidence clustered themes	n/a

3.8.4 Critique of IPA

Whilst recognising the value of such an in-depth, qualitative approach to research, there are limitations to it: many of which have been highlighted by researchers that

have used it. For example, Smith (2004) commented on the lengthy process of transcribing and interpreting the information to perform the analysis. Some commented on IPA being an 'unbendable process' (Braun and Clarke, 2006). However, they also indicated that it allows more room for interpretation than thematic analysis, which can be invaluable when analysing complex and nuanced phenomena (Braun and Clarke, 2006). Similarly, it was argued that the inflexibility results in consistency and clarity (Smith *et al*., 2009).

As with other interpretative methods, IPA is not free of bias as the researcher is involved in processing the information and making inferences. This is recognised and commented on as a positive, as it allows the researcher's skills and knowledge to be utilised (Smith *et al*., 2009). That said, it can bring into question the conclusions drawn from the findings and the accuracy relating to the participants in a given context (Smith, 2004). To overcome this, a researcher can use differences in tone when reporting to indicate the level of speculative interpretation. The research will not be objective, nor does it aim to be. This can therefore limit the generalisable nature of findings. In response, researchers using IPA indicate that the connections between participants and the themes found through the analysis allows learning to occur about the phenomenon and therefore has great research value (Smith, 2004). This is a similar stance taken by other qualitative research methods, such as thematic analysis (Braun and Clarke, 2006).

Despite some criticism, the use of IPA within qualitative research is widely recognised as a valid and worthwhile approach. Moreover, it is conducive to research in a school environment and the type of research within the current project (Pietkiewicz and Smith, (2012). It aims to uncover complex information about a specific stressful event in a young person's life. By using IPA, it was hoped that detailed information would be

gained from relatively short, open interviews which would involve the young people. Their 'voice' will be captured as part of this process by using IPA's reflective approach (Smith, 2004). It is important to make the most of the young person's contributions as well as the researcher's knowledge (Smith *et al*., 2009).

3.9 Trustworthiness

When conducting any research, ensuring that it is valid and reliable is of importance (Thomas, 2009). Qualitative research tends to avoid these terms and uses 'trustworthiness' as an alternative term because of the type of data collected, the methods used and the conclusions drawn. As such, the trustworthiness of this research needs to be highlighted.

For research to be trustworthy, the researcher must responsibly take account of the trust of those involved and how the research presents its findings, be aware of the methods of sharing the results, and ensure transparency and clarity (Yardley *et al.,* 2014). This includes important concepts such as anonymity and responsibility (Yardley *et al.,* 2014) which have been covered as part of the ethical considerations of the research (see section 3.10).

The considerations in conducting trustworthy research are summarised in the following table, adapted from Yardley (2000):

Table 3. Considerations of trustworthy research

Area	Considerations	This research
Sensitivity to context	Relevant literature should be commented upon and empirical data referenced accurately. Participant's perspectives should be reported accurately and sensitively. There needs to be careful ethical considerations	Systematic search of previous literature was offered. Critical appraisal of previous research to identify knowledge of the topic and gaps for further research. Use of IPA aided the accurate reporting of participant views. Ethical consideration and approval gained (see section 3.10).
Commitment and rigour	Research should demonstrate methodological competence to engage with topic. There should be a depth and breadth of analysis.	Methodology suitable for investigating the topic area. Proven methodologies, theories and models included. IPA allowed detailed analysis of individuals and as a group.
Transparency	Clarity of description and argument, explanation of methods and data presentation should be clear. Consideration of the reflexivity of the researcher.	Findings and discussion presented clearly, with reference to participants' views, interpretations and links to previous research. Positionality of the research was made clear, as was the awareness of the researcher's interpretive bias.
Impact and importance	Research should be of theoretical, socio-cultural and practical importance. It should add to knowledge, help cultural understanding and be useful for practitioners.	Research has added to theoretical understanding, awareness of the systems that affect the topic and can be used to inform and improve practice.

3.10 Ethical considerations

During the planning phase of the research, this project was approved by the University of Birmingham's ethics board (*Application for Ethical Approval*: see Appendix 5.). This was approved in June 2017. The research followed the guidelines put forward by the British Psychological Society, Code of Ethics and Conduct (BPS, 2009) and Code of Human Research Ethics (BPS, 2014). Ethical consideration was in line with the recommendations of the British Educational Research Association (BERA) in their revision (2011) of the 'Ethical Guidelines for Educational Research'. All areas of ethical consideration are presented in the table:

Table 4. Ethical considerations

Guideline	***Description***	***Overcoming the ethical considerations***
Responsibilities to Participants	Individuals must be treated fairly, sensitively, with dignity, and within an ethic of respect and freedom from prejudice regardless of age, gender, sexuality, race, ethnicity, class, nationality, cultural identity, partnership status, faith, disability, political belief or any other significant difference.	Throughout the research, within the sampling process, interviewing and analysis, there will be no oppressive or prejudicial actions of any individuals. Within the sampling, for example, many of the characteristics will remain unknown to me; the only known information will be the details pertaining to the inclusion and exclusion criteria.
Voluntary Informed Consent	Participants must understand and agree to their participation without any duress, prior to the research getting underway.	Participants will be offered comprehensive information about the research and written consent will be gained prior to any involvement. It will be clear that they can opt out and not participant if they wish to.
Openness and Disclosure	The researcher will avoid deception or subterfuge unless the research design specifically requires it to ensure the appropriate data is collected or that the welfare of the researcher is not put in jeopardy.	This research does not require any deception of any participants. The aims and reasons for the research will be shared prior to the commencement of their involvement. If at any point I recognise there has been accidental deception, I will make the participants aware of this and correct it as necessary.
Right to Withdraw	The participants must have the right to withdraw from the research for any reason, and at any time. They need to be informed of this right. The participants' decision to withdraw must be accepted. In such circumstances, the research must examine their	The participants' rights to withdraw will be made clear prior to the research commencing, during the process and after they have finished their direct involvement. I will accept their decision to withdraw and will not persuade or coerce them into continuing. I may ask

	own actions to assess whether they have contributed to the decision to withdraw and whether a change of approach might persuade the participants to re-engage.	questions as to why they have withdrawn, so that I can learn from it and adjust the research accordingly to avoid further distress and withdrawal of other participants.
Children and Vulnerable Young People	The research must comply with Article 3 and 12 of the United Nations Convention on the Rights of the Child. All actions should have the best interests of the child as the primary consideration. All participants who are capable of forming their own views must be granted the right to express their views freely in all matters affecting them. Children and Young People shall be facilitated to give fully informed consent. These Articles apply to all participants; children, young people or vulnerable adults involved in the research. Researchers can ensure that they comply with legal requirements in relation to working with school children or vulnerable young people and adults. Researchers must recognise that participants may experience distress in the process and must take all necessary steps to reduce the sense of intrusion and to put them at their ease. Research must desist from any actions that cause emotional or other harm. Recognise concerns relating to the 'bureaucratic burden' of research and seek to minimise the impact on the normal working and workloads of participants.	Throughout the research, the Rights of the Child will be adhered to and considered. There will be measures to protect these rights. For example, if any distress is caused, this will terminate the interviews immediately and support will be offered. There will be support and advice available to all participants, and they will be made aware of these before and after their involvement. The views that the participants share will be dealt with confidentiality and respect. All of their views and comments will be recorded without interpretation, thus representing their opinions accurately. The working expectations on the participants will be kept to a minimum so that the research does not negatively impact on their lives. The length of interviews and their involvement will be indicated beforehand. The participants will be able to withdraw at any point.

Detriment Arising from Participation	Make known to the participants any predictable detriment arising from the process or findings. Any unexpected detriment to participants must be brought immediately to their attention.	All possible impacts of the research will be communicated clearly to the participants prior to the start of the research. They will be given the opportunity to ask questions and gain further information as required. By talking about possibly negative life events, there is a chance that this will resurface the same emotions that they felt at the time; this will be discussed prior to the interviews and support will be offered afterwards.
Privacy	Participant data must be treated with confidentiality and anonymity. Recognise the participants' entitlement to privacy and must accord them their rights to confidentiality and anonymity. Conversely, researchers must also recognise the participants rights to be identified with any publication of their original works or other inputs, if they so wish. Comply with the legal requirements in relation to the storage and use of personal data as set down by the Data Protection Act (1998). People are entitled to know how and why their data is being stored, to what uses it is being put and to whom it may be made available. Participants have the right to have access to any personal data that is stored in relation to them. Data must be kept securely and that the form of any publication, does not directly or indirectly lead to a breach of agreed confidentiality or anonymity.	All recordings and transcripts will be treated with confidentiality and anonymity. Each participant will be given a code to replace their name throughout the process. Data, recordings and transcripts will not be shared with any third parties. The recordings will be destroyed once the transcripts have been written. If participants wish to be named, they will be given a chance to express this and it will be agreed upon. Their name can be included in the research publication. All sensitive data will be stored securely, using encryption and will be destroyed appropriately after its usage. During the research process, the participants will be able to request their data. Contact details will be shared so that easy contact can be made.

		The publication will not breach the confidentiality and anonymity of the participants, unless agreed upon by them in advance.
Disclosure	Any consideration to disclose actions or behaviour to the appropriate authorities must be done with due care. The decision to override confidentiality and anonymity must be taken after careful and thorough deliberation. It may be in the researcher's interests to make contemporaneous notes on decisions and the reasoning behind them, in case a misconduct complaint arises. Researchers should debrief participants at the conclusion of the research and to provide them with copies of any reports or other publications. Ensure participants are informed of the outcomes of the research.	If there are actions or shared information that causes me to question the need to disclose these, I will seek appropriate support and supervision. I will, if decided as necessary, disclose information to the appropriate authorities (school, local authority, police, etc.). The decision to do so will not be taken lightly and will be considered carefully before doing so. Participants will be made aware prior to their involvement that this will be the case, should they disclose information of a troubling nature. I will inform participants that the research has concluded and share with them reports and publications. All outcomes of the research will also be shared to those involved in the production of the publication.
Methods	Employ methods that are fit for purpose of the research being undertaken. Offer a full, honest and amenable justification on the final choice of methods. Communicate the extent to which the data collection and analysis techniques, and the inferences to be drawn from the findings, are reliable, valid and generalizable.	The methods chosen for the research will be carefully considered. This will be in answer to the feasibility, appropriateness of the methods chosen, and in consideration of time restrictions for the research. The methods chosen will be clearly described in the publication so that the justifications will be visible. Within the publication, the reliability, validity and the generalizable ability of the findings will be discussed.

Publication	Recognise the right of researchers to independently publish findings of their research under their own names. Fulfil the obligation to ensure that the findings are placed in the public domain, and within reasonable reach of educational practitioners and policy makers, parents, pupils and the wider public.	It will be made clear to all sponsors that the findings and publications will be published under my name, and the names of contributing others. In agreement with the holders of the publication, it will be made public in accordance with the University of Birmingham Thesis guidelines. It will be placed in the public domain so that it is accessible to interested parties.
Responsibilities to the Community of Educational Researchers	Act in a way that is in line with the responsibilities of all those engaged in educational research including academics, professionals, teachers and students.	Throughout the carrying out of the research and in the production of the publication, I will act in accordance with the responsibilities of the research community.
Misconduct	Must protect the integrity and reputation of educational research by ensuring they conduct the research to the highest standards. It must not bring research into disrepute. If the researcher becomes aware of malpractice, or potential malpractice, they must present their concerns, without public accusations or allegations. Make data and methods amenable to reasonable external scrutiny. Researchers must accord due respect to all methodologies and related methods. Contribute to the community spirit of critical analysis and constructive criticism that generates improvement in practice and enhancement of knowledge.	I will do my best to act in a way that represents the community with high integrity and standards. I will not act in a way that brings the research community into disrepute. Any malpractice on my behalf, or any other parties involved in the research will be noted and reported to the appropriate parties, such as the sponsors. External scrutiny, critical review and analysis, and constructive criticism will be welcomed throughout the research. All advice and recommendations will be considered. The research aims to enhance understanding and contribute to the research community.

Authorship	Comprise a list of everyone who has made a substantive and identifiable contribution to the generation of the publications. The order of authorship should reflect the relative leadership and contributions made by the researchers concerned.	Within the written publication, all those who contributed substantively to the research will be named, with their agreement. Any confidentiality will be maintained for those who wish not to be named.
Responsibilities to Educational Professionals, Policy Makers and the General Public	Seek to make public the results of their research for the benefit of educational professionals, policy makers and a wider public understanding of educational policy and practice. Endeavour to communicate the findings, and practical significance, in a clear, straightforward fashion and in language judged appropriate to the intended audience.	The research publication will be made public appropriately in order to share the research findings with other professionals. All findings will be communicated clearly to the participants involved and any other contributors to the publication. The way this is presented will be fit for the intended audiences.

CHAPTER 4: FINDINGS AND DISCUSSION

4.1 Phase 1 findings and discussion

Phase 1 involved an online survey which was sent to all secondary schools in the local authority. This was to be filled out by staff, such as Head of Years, who would have an understanding of the data surrounding GCSE results, what provisions were in place to support students and how they felt about exam stress. Online surveys were chosen for their ease of sharing widely across schools, and the returning data collection (Thomas, 2009).

However, as noted by Cohen *et al.* (2011), online surveys are susceptible to low response rates and possibly unreliable self-report questionnaire results. This was indeed the case in this research. From the schools presented with the online survey, only one survey was returned, and this was incomplete. As a result, no results or information were obtained from this phase of the research.

Phase 1 aimed to give a broad context within which the research was carried out. It aimed to identify the views of the school staff and some data pertaining to the line of enquiry. The lack of returned responses meant it was not possible to add this qualitative knowledge of the systems in place, but this did not influence the main findings from phase two. Some contextual information was still identified by using the school and local authority websites, where some information is shared.

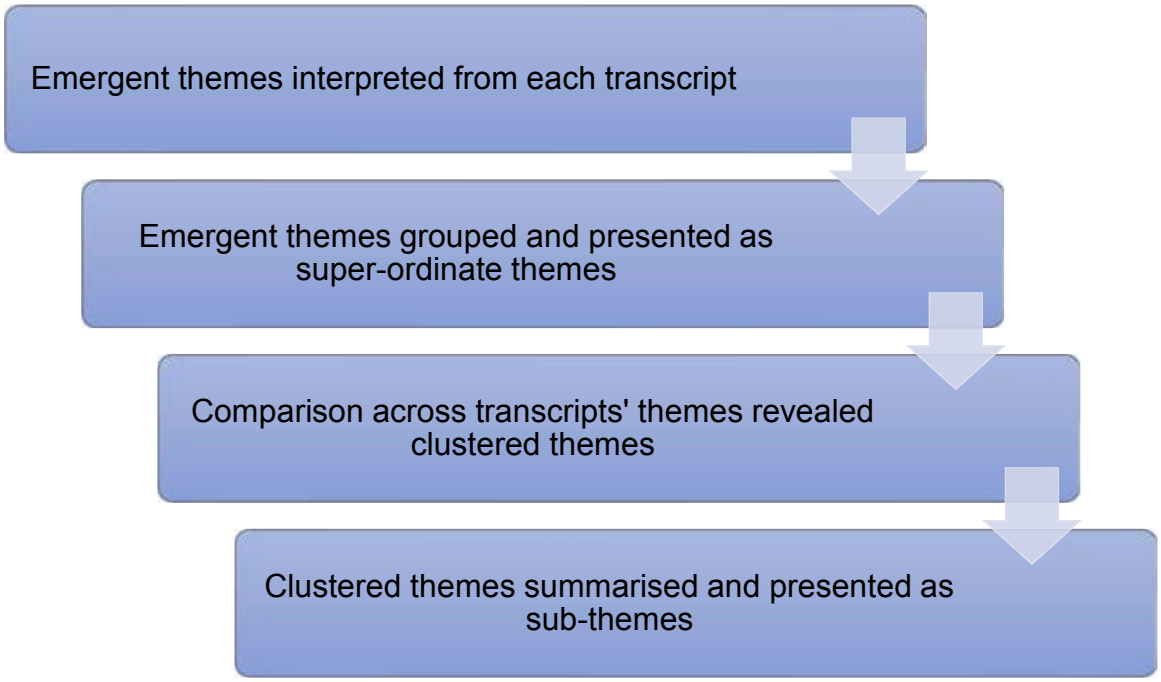
The Local Authority in which the research took place is a metropolitan area which has 17 academy or maintained secondary schools (2018). The school in which this research took place is an academy and has been since 2013 and has approximately 1500 students. It is situated on a large, new-build site and serves a wide-ranging community in terms of culture, affluence and education. The school offers a wide range

of GCSE subjects and has a 6th Form, where students can take A levels and post-16 qualifications. In the academic year of 2016/17, 39% of students attained Grade 4 or above in English and Maths at GCSE. 15% of students achieved a Grade 5 or above. The Local Authority average was 29% at Grade 5 or above. These figures are an improvement from previous years, but indicate areas for development, as noted by Ofsted, 2017. In January 2017, it was judged to be 'inadequate' and it remains in 'special measures', although some improvements have been identified in subsequent Ofsted inspections. This is likely to increase pressure as a result of the need for exam results (ATL, 2012).

4.2 Phase 2 findings and discussion

The findings of this phase of the research follow the applied process of IPA (see Figure 3.). To begin, the transcripts and researcher notes were reviewed, and emergent themes were identified. These were grouped into the research questions (presented as the super-ordinate themes) (Pietkiewicz and Smith, 2012). These steps are demonstrated fully in Table 2. (p.59). Patterns across participants were used to create overall clustered themes (sub-themes) (see Appendices 2. and 3.). Previous literature had guided some of the open questions that were explored in the semi-structured interview process, but these models were not mentioned specifically to the participants and were only used as a tool as part of the analysis.

Figure 3. IPA process



These clustered themes were the key findings and will be shared, using quotes, to answer the research questions. The research questions had been guided by previous literature, either as areas of interest or areas where gaps in the literature could be filled. The research questions were:

- How do Year 12 students feel their GCSE experiences affected their wellbeing and performance?
- What factors contributed to, or alleviated, levels of exam stress (personal, social and educational)?
- Can theories, such as Achievement Goal Theory, be used to explain the individual differences in levels of exam stress?

4.2.1 Participants

Table 5. offers a summary of the participants, compiled after the data was collected and during the analysis. The level of ability was based on predicted and actual grades. This information was gained through the questionnaires used to sample the students (see section 3.4). The level of stress was based on their perceived levels of stress and my interpretations of the way in which the students talked about their stress during the exam period. The process of IPA guided my interpretations of the comments made. The levels of stress correspond with their perceptions of their levels of stress, communicated during the interviews. This incorporated both my interpretations, as the researcher, and the students' interpretations of their situations, with the aim to understand their experiences and inspect hermeneutics (the way in which particular meanings are interpreted) (Langdridge, 2007). The table shows that a range of ability and exam stress levels were included:

Table 5. Participant characteristics

	Gender	**Level of ability**	**Level of stress**
Student 1	Female	High	High
Student 2	Female	Low	Medium
Student 3	Female	Medium	High
Student 4	Male	Medium	Low
Student 5	Male	High	Low
Student 6	Female	Medium	V. High

4.3 Phase 2 themes

The super-ordinate themes and sub-themes, which summarise the main findings, are presented using the figures below, in line with IPA methodology (Pietkiewicz and Smith, 2012).

Figure 4. Research Question 1: How do Year 12 students feel their GCSE experiences affected their wellbeing and performance?

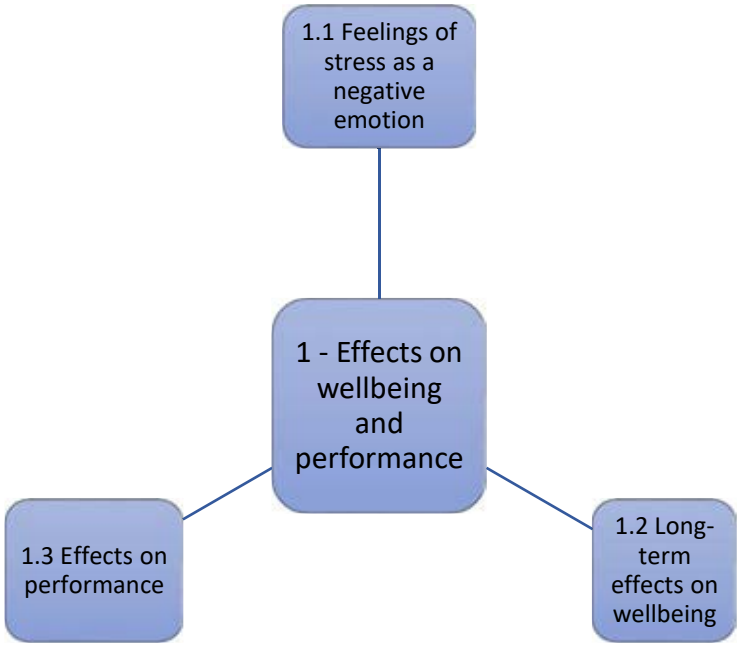


Figure 5. Research Question 2.1: What factors contributed to levels of exam stress (personal, social and educational)?

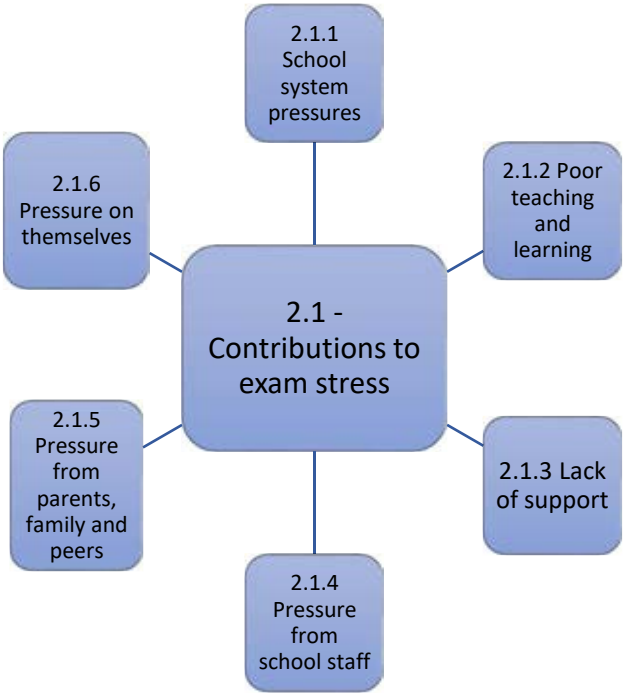


Figure 6. Research Question 2.2: What factors alleviated levels of exam stress (personal, social and educational)?

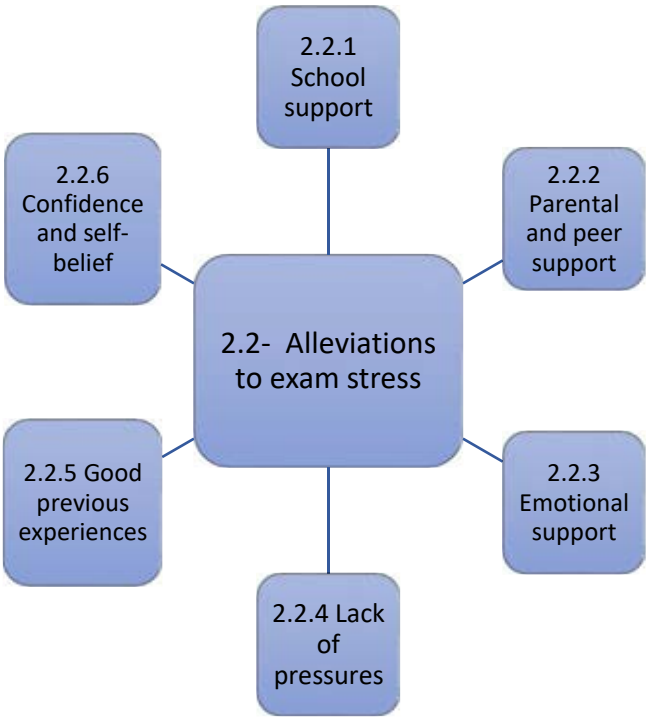
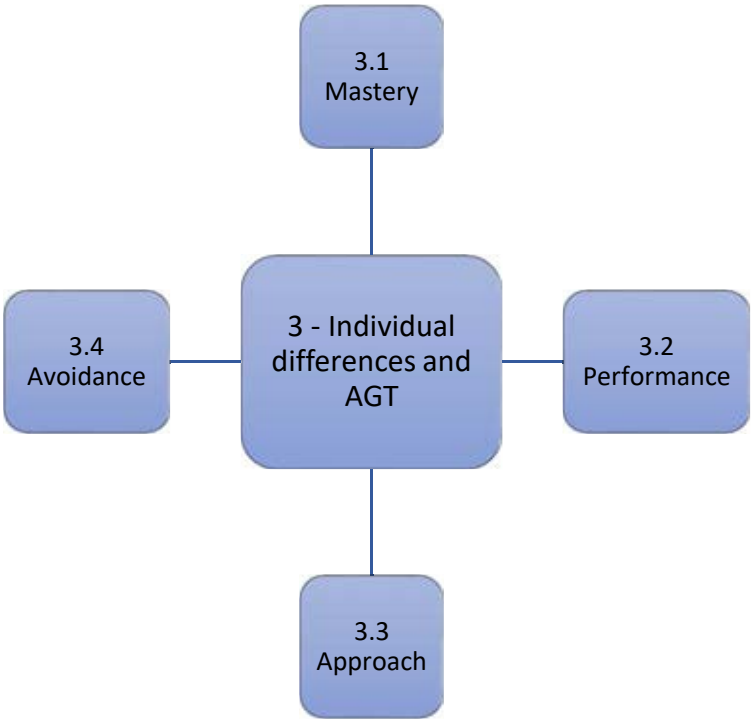


Figure 7. Research Question 3: Can theories, such as Achievement Goal Theory, be used to explain the individual differences in levels of exam stress?



These thematic figures will now be discussed in more detail. This will allow quotations to be included, so that the interpretations can be transparent. Also, reference to previous literature will be offered, indicating the similarities or differences in findings. This will be presented under each of the research questions (super-ordinate themes) in turn.

4.4 How do Year 12 students feel their GCSE experiences affected their wellbeing and performance?

Overall, students found exams stressful: the students indicated this to differing levels, it was apparent that they felt stressed at various parts of their exam experiences.

4.4.1 Feelings of stress as a negative emotion

All six students made comment to the feelings of stress in relation to various parts of their exam experiences. Some commented generally about being stressed, others made note of specific symptoms that are linked to stress.

> *"*Did the stress get in the way of your learning?
>
> *Yeah I think so. I was so stressed. I was just thinking about the exam, I wasn't doing anything about it." (Student 2)*

This response indicated that Student 2 felt a heightened level of stress in comparison to their usual or 'normal' level of school-related stress.

> *"… I just can't sleep" (Student 4)*

> *"I was proper depressed you know" (Student 5)*

Some comments made by the students, like these, refer to symptoms of stress. These varied from concentration and cognitive symptoms, to more physiological ones, such as sleep issues. The same is seen below:

> *"When I first picked up my pen… I was shaking I couldn't write… I was so scared… I think it was the fact that I didn't know what was going to happen." (Student 6)*

It is possible to interpret the level or severity of their stress, albeit over a relatively short period of time and in relation to a specific phenomenon. It can be argued that these symptoms could be detrimental in a number of ways to the young people. There were also comments about stress in relation to certain elements of their experiences: some were stressed during revision, some in the exams, and some after while waiting for results.

> *"The revision was hard, I found it so stressful" (student 3)*

> *"I went in and saw everyone sat there, I was a bit nervous" (Student 2)*

"I cried after my first one, I was shaking" (Student 6)

The students' comments reflected and supported the findings of previous research: Denscombe (2000) referenced the negative effects exam stress can have on wellbeing. Research also indicated that 'academic stress' is a significant cause for concern in schools (Connor, 2001) and that many elements of school life are designed to prepare students for exams but can cause stress (Austin *et al*., 2010).

4.4.2 Long-term effects on wellbeing

All the students made comments relating to the longer-term effects of their experiences. These tended to be negative: most noted that it had an effect on their confidence or self-belief in learning and future exams, or other areas of their lives like friendships and family relationships.

"I went into them thinking 'I'm going to mess this up'" (Student 1)

This student's comments indicate a lack of self-belief in their learning or preparation for their exams. This was despite being a high achiever who historically achieved good grades. Other students commented similarly:

"The revision was hard, I found it so stressful…I blame myself, I should have done more" (Student 3)

This student has taken responsibility for their exam outcomes, but in the form of blame. This may indicate a lack of confidence in their skills and feelings of guilt for not doing more.

"We (friends) used to clash 'cos we were all stressed" (Student 1)

These comments indicated the significance of the effect the stress had on the students. For comments to be made about the long-term effects indicates the severity of the

stress that they felt. This supported the findings of Putwain (2008a) who reported the detrimental effects on one's self-efficacy as a result of negative and stressful situations. Interestingly, two of the students made more positive comments relating to the long-term effects. This was interesting and in contrast to some of their other comments and those of the other students.

> *"I've got a bit of self-confidence, self-belief that I know what I'm doing, I've got a path, I'm enjoying it" (Student 3)*

> *"When I went back in and compared my results to everyone else I felt really proud" (Student 6)*

As stated, there were clearly some positive experiences for some of the students. These were in relation to future exams and moving forward following the experiences. This could be linked to their new or developing mindsets (see section 4.6). This was also reported in some previous research: performance can be improved, and self-efficacy and confidence can grow (Dull, Shleifer and McMillan, 2015; Putwain, Remedios and Symes, 2016).

4.4.3 Effects on performance

Despite the stress levels and negative view of the experiences of exams, all participants made remarks that they were happy overall with their results and that they did well.

> *"I was happy that I passed… I was chuffed" (Student 1)*

> *"I was pleased… I didn't think I was going to get it (my grade)" (Student 6)*

Many of these comments were made with surprise, or relief. The open nature of the interviews meant that they were able to talk about the positives as well as the negatives

they experienced. Although they were identified stress as a negative feeling, most commented on successful outcomes. These comments support the findings of Putwain *et al*. (2012) who identified that exam-day stress improved performance. Similarly, Folkman (2008) and Hardy and Hutchinson (2007) reported that self-worth and confidence was seen in students who used exam stress as motivation to achieve.

Interestingly, some did not achieve their predicted grades and had a variety of reasons why this might be, including their level of stress interfering with revision and exam performance. It has been reported that stress impairs cognitive capacity and working memory (Beilock, 2008) and this research supported this view. Stress was commented on as affecting their learning, revision or exam performance. This was either directly commented upon or inferred that they would do better now with the experience of this time round, for example.

> *"I tried revising but I couldn't… I just gave up,*
> Is that always the case or just with these GCSEs?
> *Yeh any revision… I just can't get into it" (Student 4)*

> *"That (stress) got it the way so much that I didn't revise and then I didn't do my best (Student 2)*

Student 2 indicated a level of regret or guilt about not revising and the perceived implication this had on their results, whereas Student 4 appeared more accepting of their fate, as a result of a feeling of not being able to do anything about it. They both attribute the lack of revision to stress, rather than other factors.

> *"Yeah I do (feel stress impacted on the exam performance) … I feel that maybe if I had calmed down… I would have been more relaxed and be able to do better" (Student 6)*

The comments indicated that the students were feeling that they wanted to do more but felt impaired by their stress levels; a maladaptive outcome (Dull, Shleifer and McMillan, 2015). They felt restricted or unable to work, interpreted as a cognitive interference effect of stress, where the students were pre-occupied by worry.

4.5 What factors contributed to, or alleviated, levels of exam stress (personal, social and educational)?

4.5.1 Contributing to levels of stress

Students identified many factors that contributed to their level of stress. These varied in severity across participants, but many factors were shared and were believed to have significantly affected their stress levels during their exam experiences.

4.5.1.1 School system pressures

This was the students' first experience of external exams and they mentioned how 'serious' they felt, despite mocks supposed to have served as practice for this. Student 5 was explicit in commenting on this aspect:

> *"I think I didn't have a proper understanding of how serious the exams are" (Student 5)*
>
> *"It will be helpful if previous exams like the mock exams felt more real" (Student 5)*

The feelings of 'seriousness' of the exams was due to the implications of the exams, for their future learning and academic success and possible employment. The students were aware of these and the pressure this caused. Also, they felt stressed by the exam system, in terms of this being the gateway to their futures. These comments reflected

the findings of Chamberlain, Daly and Spalding (2011) who commented on the burdensome and stressful nature of exams. Torrance (2004) noted that public exams were more stressful then previous exam experiences.

The time element and the environment of the exam rooms also contributed to their levels of stress.

> *"It was hard in the exams, 'cos of the time… the questions were hard and I didn't have time" (Student 4)*

> *"I think that's the worst part, being in a time limit" (Student 6)*

These environmental factors, like the setup of the room, the invigilator procedures and the time limits all contributed to the stress in the students. Sung, Chao and Tseng (2016) commented specifically on the time pressures of exams and how these contributed to stress levels.

4.5.1.2 Poor teaching and learning

Another contribution to their stress was the feeling of their gaps in learning, either due to poor teaching or there being too much material to learn and revise. There were lots of subjects, with lots of material, and this was overwhelming for the students.

> *"I think it's impossible… there is that much you have to cram into 2 years… we didn't learn all the stuff, it was impossible to teach" (Student 1)*

> *"I failed because, I felt like I wasn't taught much in that subject… Sometimes I didn't even know what to revise" (Student 3)*

> *"I think I would have got a better grade in English if they had made sure the everyone knows the basics before moving full speed ahead" (Student 5)*

Although these comments are subjectively about some specifics to this school and its teachers' practice, the amount of material within the curriculums and the number of subjects is the same for all students taking those exams. As such, these comments indicate a source of stress that lies within the exam system, as well as possible areas for improvement within this school. As shown, most of the students involved discussed the struggle to be taught all the material and then revise it all for the exams. Previous research has stated that having too much to learn and revise restricted the mastery mindsets that were more desirable for achievement (Cook and Artino, 2016). However, the comments made in this research also reflected a lack of confidence (Ntoumanis, 2001). This view of 'not coping' implied a sense of being overwhelmed and not being prepared: factors that contributed to levels of stress (Chamberlain, Daly and Spalding, 2011).

4.5.1.3 Lack of support

Most students felt there was a lack of support and they wanted more. This was in relation to support offered in school with their learning and revision of material in preparation for exams, but also a lack of wellbeing support. The amount of wellbeing support that was wanted varied between the students, but most commented that there was not much available.

> *"I think if we had had more support in Year 10, it would have been better" (Student 1)*
>
> *"We were not really aware of the systems to get support" (Student 1)*
>
> *"There wasn't enough support for me…so I had to do it on my own" (Student 6)*

Some of the students, like Student 1, appeared resigned to the fact there wasn't support, whilst others (Student 6) showed a degree of self-help to overcome the

situation. This difference may have been seen due to the different approach or avoidance mindsets to the phenomenon (see section 4.6). Austin *et al*. (2010) identified the need to support learning and revision and that this would influence performance and wellbeing. These comments made by the students indicated that little support was available or sought. Inevitably, some individuals needed more support than others: individual difference in coping has previously been identified (Putwain, 2009b). However, across these students, with varying levels of ability, they all commented on a lack of wellbeing support specific to their exams. This was expected based on previous research and experience. Robson *et al*. (1995) called for identification of vulnerable groups and the offer of support: this should include both learning and wellbeing.

4.5.1.4 Pressure from school staff

Previous literature commented on the different sources of pressure placed on students and how these add to the levels of stress (Peleg, Deutch and Dan, 2016). The students in this research commented upon similar sources of pressure. They were all aware of, and negatively influenced by, the pressure applied by school staff and the school system in general.

> *"They were asking me how much revision I had done… all the time… they got my notes out" (Student 2)*

> *"It wasn't that they put pressure on you as an individual, the whole Year was put under pressure" (Student 6)*

The students commented that their teachers were interested in their work and revision. However, some of them felt a sense that the teachers were doing so in such a way that applied pressure, rather than support. This was pressure to make sure they were doing

enough and would do well, but also pressure to make sure they knew the consequences of doing well, or not. This type of pressure was therefore viewed negatively as it added more stress, even if it was meant to be motivational. This negative appraisal of the teachers' input could reflect the student's mindsets (see section 4.6) Furthermore, some of the systems in place added to the stress:

> *"I didn't want to do French in the first place… the old head teacher chose it for us" (Student 4)*

This removal of choice could add to stress too as the students felt helpless and controlled by their teachers. These findings supported those of Zeidner (1998) who commented on school-related pressures including staff putting pressure on the students to achieve, as well as the performance-based system within the UK (Putwain, 2008a). Furthermore, Denscombe (2000) found that teachers were contributing to student stress as they had control over predicted grades and subject choice; more control than the students, who were left feeling helpless. Notably, these comments made reference to the fear appeals used by staff which can cause significant levels of stress (Putwain and Roberts, 2009; Putwain, Remedios and Symes, 2016). These students report that applying pressure in this way was detrimental and contributed to their levels of stress.

4.5.1.5 Pressure from parents, family and peers

The students in this research openly discussed the pressure they felt from their families, particularly their parents. Although this varied in severity and whether the pressure was viewed more as support, it was noticeable that families and parents had a strong influence on the students. The same could be said for peers, where some felt supported by their friends, whilst most commented that it added to their levels of stress.

"My sisters have got good jobs and they had to work really hard to get there (inferring pressure)" (Student 2)

Student 2's comments indicated an inferred pressure to do as well as their siblings who previously did well and are now working. It was interpreted that this student put themselves under increased pressure based on wanting to do as well as others, and not let the family down.

"My dad, oh wow, he's proper strict. He was just stressing me out more… not much support at home" (Student 3)

Student 3 made comments relating to direct pressure from a parent, where strict routines and 'support' presented as stress-inducing activities and pressure. As demonstrated, some commented on implied pressure and some felt more direct pressure to do well. This variance, and the severity of the stress caused, may be interpreted as individual differences in coping or how the messages were appraised. For example, a student with high levels of confidence and coherence with their parents may view the parents' comments as supportive in comparison to a student with lower self-esteem. As such, these comments were subjective, but indicate the fragility of some of the students during the time of exams. These students were aware of the pressure on them and the stress this caused.

"I think it (friends) can help you cos it does motivate you to do more, but then… it puts more pressure on more than anything else" (Student 1)

"I was kinda supporting my friends, rather than them supporting me" (Student 6)

Friends similarly to parents, may have been aiming to be supportive but some comments can easily be construed as pressurising. These students indicated this

clearly, either through the pressures of social interactions and groups or through having to support others, distracting them from their own work.

Both pressure from parents and from peers have been cited previously. While parent engagement was important for performance (Harris and Goodall, 2008), too much involvement can be perceived as pressure (Chamberlain, Daly and Spalding, 2011). Similarly, previous research discussed the impact of parents having unrealistic expectations (Fox *et al*., 2005). Some students commented that the relationships with friends and family helped them. This supported research that stated high fusion with parents and friends mediated stress levels (Chamberlain, Daly and Spalding, 2011) but comparisons to peers was a source of external pressure to be avoided.

4.5.1.6 Pressure from themselves

Finally, all the students identified a theme that was evident within the research literature: the pressure they applied to themselves (Denscombe, 2000). All the students identified that they put themselves under pressure to achieve, for a variety of reasons. This can be seen through the previously mentioned sources of pressure in the way they are interpreted, but some students also put themselves under pressure directly. This contributed significantly to their levels of stress.

> *"The pressure of it, it determined whether I could do A levels, it determines your future" (Student 1)*

A number of students, Student 1 for example, identified that the exams would be part of their academic record and would either open or limit their options. Indeed, many commented on future implications, such as further study and even employment.

> *"I think if I want my dream job I am going to have to work ready hard" (Student 2)*

These feelings that so much relies on the exams increases the pressure significantly, particularly if the students' hopes and future plans are ambitious, which many were. Other students' comments reflected more of a personal drive, to want to achieve for their own self-worth. This has been cited in literature a being part of one's identity, and these students demonstrated that:

> *"I want to achieve something that is higher… I want to achieve the top" (Student 5)*

> *"I really wanted to do well for myself… I know what I want to do in the future and I was very stressed in case I didn't get that" (Student 6)*

These students indicate a drive to achieve for themselves rather than for grades or specific goals. This can be linked to a mastery mindset and approach, as opposed to a performance and target-based motivation. The different reasons for the students putting pressure on themselves will be explored in more detail as part of Research Question 3 (Section 4.6), where goal orientation and strategy is discussed in more detail. However, it was important to note that this was, for some, a significant source of stress for the students: a finding that supported previous findings (Giddens, 1991; Putwain, 2007a).

4.5.2 Alleviating levels of stress

In contrast to these contributing sources of stress, the students were also able to identify a number of factors that helped reduce their stress, or aided them in coping with the stresses of the exams. Interestingly, many of these factors are similar to the sources of stress but may be interpreted or appraised differently by different students. This means that the differences between contributions and alleviations may be small

and interpreted in different ways. Nevertheless, it is possible to interpret and understand what factors helped some, and how these factors may help alleviate stress for others.

4.5.2.1 School support

While most discussed the lack of support on offer, some made note of what support was available from teachers and how this helped.

> *"I got on really well with my teacher and if I ever didn't understand something I felt as if I could go and sit with them" (Student 1)*

The relationship is clearly important and one that Student 1 found invaluable. Perhaps, not all the students had these relationships with their teachers. Some of the support on offer reflected the need to support the self-esteem, emotional processing and self-management of the students. This was talked about by the students who had lower self-esteem, interpreted through their comments about their achievements and confidence (or lack of) moving forward. Self-esteem and sef-management were factors identified as key elements that promote wellbeing (McDonald and O'Hara, 1996). Various types of support were found in schools to support students with exam stress, and wellbeing more generally (Jamieson *et al*., 2016). This reflected the findings of Putwain (2008b) who commented on the increased pressure on schools to support students in this way.

4.5.2.2 Parental and peer support

Peers and families were identified as sources of negative pressure by some, but were supportive for others:

"She (peer) helped me out (in class) and showed me where the page number was and what information to pick out so that I could answer the question" (Student 2)

Student 2 is referring to a peer whom they were not friends with previously, but still someone who helped them when they needed it, specifically during the revision sessions. This surprised the student and was certainly a welcome source of support.

"It was like someone was in the same boat as me, if I didn't understand everything" (Student 6)

Similarly, some of the students commented on a 'togetherness' and strength from having others around them, either directly helping or just experiencing the same situation. This sense of together and group survival appeared to help.

"My family were really supportive… my mum would say 'even if you fail, it doesn't matter, it's not the end of the world'… I'm grateful for my mum for helping me pass my GCSEs" (Student 6)

Student 6 implies that she may not have passed her exams without the support from her mum. This is a strong indication of her feelings about the support offered and how much this was valued. These comments reflected the importance of parent relationships (Berry and Kingswell, 2012) and parental engagement, as cited by Harris and Goodall (2008). Equally, the students were making reference to the support received from peers, indicating peer involvement and social participation: these were also factors identified as being important for maintaining wellbeing (McDonald and O'Hara, 1996).

4.5.2.3 Emotional support

Support that was available was described by the students as being in relation to studying, exam skills, revision tips and learning. There was less in the form of emotional support or exam stress-related support. That said, some emotional support from school staff was identified by some: it was commented that this was reliant on the individuals to seek this type of support and required a good relationship between the staff and the individual:

> *"Me and my friend came in a bit earlier to go through maths with the teacher … we were really stressed out and he was like 'calm down, it will be fine, it's just a paper, its only for an hour'" (Student 2)*

> *"I think that a lot of the teachers were there for you, specially my history teacher. They also provided after-school things to be able to access" (Student 5)*

These students felt that while improvements could be made to this kind of support, what they did receive helped them in relation to their exam stress. Not all students were able to identify or comment on support of this type. Again, this may relate to the approach or avoidance strategies employed by the various individuals (see section 4.6).

This type of support could be improved by considering Bronfenbrenner's Ecosystemic approach (1979) and support students at different levels (macro, meso, and micro systemic support), such as individual and class-based support, in addition to shifts in school ethos about wellbeing.

4.5.2.4 Lack of pressures

Similar to this, some of the students felt that their school staff and families did not put too much pressure on them, which helped them cope with the situation. This was in direct contrast to some views previously mentioned and indicated a difference in the way these messages from staff and parents were perceived by the students (Putwain, Remedios and Symes, 2016).

Teachers:

> *"As long as you kept your work above a certain level you didn't have to worry about anything" (Student 5)*

Some felt comfortable in their learning levels and ability in order to please staff and to do well in their exams. This shows a degree of self-esteem and confidence that may not be shared by all students.

Self:

> *"If I know I can do something, the grade doesn't bother me really… if I know I tried and I got my grade, then its ok for me" (Student 4)*

Interestingly, Student 4 comments on his confidence, discussed in such a way that indicated it would not be affected by grades. His effort and 'doing one's best' was viewed as important, indicating a mastery approach (see section 4.6). This was not a view shared by the other students who were more aware and influenced by the exam system and the need to achieve certain results.

Family:

> *"My family got generally lower than I did, so Cs were good to them, they were proud (Student 4)*

This reduced ‘pressure to achieve’ made it easier for this student. They felt supported and more relaxed in comparison to other students who felt parents were pushing them to achieve higher. These comments supported previous research that highlighted the need for parent expectations to be realistic (Oishi and Sullivan, 2005) as well as teacher expectations, reflected through accurate predicted grades (Denscombe, 2000). Demonstrating low pressure on oneself might imply a mastery approach (Dweck, 1986) and the rejection of the performance system based on achievement: this has been shown to reduce the level of exam stress (Elliot and McGregor, 2001).

4.5.2.5 Good previous experiences

Some students commented on the positive experiences they had prior to their GCSEs. While noting they were not the same, they still valued the mock exam experiences and positive grades as part of lessons and coursework. This seemed to give some of the students some confidence and positivity when faced with their GCSEs.

Mock exams:

> *“There was that many, especially with science… that many mocks, you recognise questions and find patterns” (Student 1)*

> *“Yeh I think it helped my other exams because I got to work out what really works for me beforehand” (Student 5)*

It is clear that these students felt practice gave them a sense of de-sensitisation to the exam experiences, and also a chance to develop strategies and self-help techniques prior to the formal tests. As previously mentioned however, a number of students commented that the mocks were not so useful as they were not similar enough to the real exams. A balance and a clear purpose of mock exams is therefore needed.

Carrying coursework and grades into the exams:

> *"I felt more comfortable with the exams that had got coursework with them cos I went in knowing (what was needed)" (Student 1)*

> *"Coursework and sciences were a bit boring, but it was good to have them out the way" (Student 4)*

Interestingly, research had indicated negative experiences in previous tests adds to stress (Denscombe, 2000), but there is evidence that suggested the opposite too (Putwain *et al*., 2012). Interpretations of exams vary, and this can alter one's performance (Putwain *et al*., 2012) and levels of stress (Denscombe, 2000). The students' viewed practice and positive experiences as helpful: research reported perceived confidence and challenge appraisals resulted in better performance and a more positive view of exam stress. These positive appraisals were seen as important in reducing exam stress (Folkman, 2008; Putwain, Remedios and Symes, 2016) and indicated an approach mentality (Elliot and McGregor, 2001; Conley, 2012).

4.5.2.6 Confidence and self-belief

Linked to the previous point, self-belief and confidence were stated by the students as factors that helped them cope with the stress of the exams. This confidence was seen in response to their predicted grades, or with their coping when facing the exams.

> *"I just thought that's what I'm predicted, I could get higher" (Student 6)*

Student 6 felt a sense of challenge in response to her predicted grade. She felt it was low and could improve on it. She saw it as a challenge, where others may not have been motivated by it (being low) in the same way.

"For the English exam I was ready, ICT I was ready… I liked them subjects and I revised more for them" (Student 3)

"That was one of my confident ones… I guess I was a bit too confident" (Student 5)

Students 3 and 5 both comment on the differences between their subjects in terms of confidence and resulting revision efforts and feelings of readiness for those exams. Even between these two there are nuanced differences: Student 3 worked more on those he enjoyed, while Student 5 was overly confident and may have worked less on that subject. This demonstrates the effect confidence can have, and shows how a balance is needed to motivate and ensure the best outcomes.

These findings supported previous research that exams, particularly public exams, tested one's confidence (Putwain, 2007a). The views presented indicated a positive view of the students' abilities and that the exams had further extended their belief in themselves. This proposed that self-efficacy can be both an outcome and an important antecedent to coping with exams (Putwain, Remedios and Symes 2016). Furthermore, research had suggested having a high self-belief was important in reducing the negative cognitive effects of exam stress (Chiung-Huang, 2013).

4.6 Can theories, such as Achievement Goal Theory, be used to explain the individual differences in levels of exam stress?

In this research, the comments made by the students presented a range of views that could be grouped into the four categories; mastery-approach, mastery-avoidance, performance-approach and performance-avoidance (see section 2.9) (Elliot and

McGregor, 2001). Students were categorised based on the number of comments made relating to each of the four categories (see Appendix 4.). The student's comments indicated an overall goal type and some students demonstrated new, developing goal types. Examples of the comments made by the students are discussed below, as well as the examples in the previously discussed findings, many of which related to mindsets and goals as well.

Table 6. Students categorised using AGT framework

	Mastery	**Performance**
Approach	Student 4 Student 5	(Student 1) (Student 2 dev) (Student 5)
Avoidance	(Student 4) (Student 6 dev)	Student 1 Student 2 Student 3 Student 6

Key: Brackets indicate a secondary or additional mindset. 'dev' refers to a developing, or new mindset following the exam experiences.

Shown in this table, most of the students had performance-avoidance mindsets. It was interpreted that Students 4 and 5 were mastery-based. That said, some developed or were developing a new sense of goal orientation: becoming more 'mastery' with

experience. Similarly, some were becoming more approach-focused following their experiences. These results are discussed in more detail:

4.6.1 Mastery

Mastery goals were demonstrated through a range of comments, interpreted as referring to their outlook and reasons for their motivation in exam situations. This mindset was not as common as performance goals and was not commented upon by all of the students. It was interpreted that this difference was a contributory part to their level of stress, the way they interpreted the various contributory factors to their stress and how they coped with the exams.

Students commented on subject specific motivations and non-performance goals:

> *"Yeh it (science) was interesting, history too, I found that more interesting" (Student 4)*

> *"Yes, especially the history. I got to properly learn and understand the topics" (Student 5)*

> *"I know I can do something I am passionate about and not something that is very … expected of me" (Student 5)*

These comments from these students indicate a desire to learn for the understanding, the interest and the satisfaction of knowing more. This is very different to other comments which were more performance-based. Student 5 in particular, demonstrated a real sense of enjoyment from being able to know things and find things out, which spanned well beyond the exams.

> *"I know if I tried and I got my grade, then its ok for me. It doesn't matter if I didn't get the best (grade) as long as I know I tried" (Student 4)*

Student 4, although he made a number of ‘mastery’-type comments, demonstrates the difficulty: here he is showing a desire to learn, but recognises the discord with the performance and grade-based system that he is working within. This dissonance sits uncomfortably with him (and others) and may be why the students tended to be more performance orientated.

They also discussed future jobs and success: this was both performance and mastery, depending on what their future goal was (a certain grade or job, or being happy and doing well):

> *“That determined whether I could do A levels, it determines your future” (Student 1)*

> *“I set myself a real high target, so I knew I had to do well, so I tried my hardest” (Student 6)*

These students indicated that the exam results were stepping stones towards something bigger that they wanted to achieve. It was interpreted that they were not stressed about their exams therefore, but what they meant for their future plans. This is likely to be why such high levels of stress were felt, and why it is reported that mastery mindsets may not help reduce exam stress (Dull, Shleifer and McMillan, 2015).

> *“I want to achieve something that is higher…. I want to achieve the top mentally, physically, economically… and academically too” (Student 5)*

Most telling were the comments in relation to enjoying challenges and mastery-specific comments:

"If I can't get it I'll be stuck on it and keep trying… I can normally work it out… I wouldn't ask them (teachers) for the straight answer, but if I get help I'll probably get it eventually… I want to get it" (Student 4)

"I'll try and figure it out after (the exam). I'll remember the question and do it after… I can't just leave it" (Student 4)

"One reason why I like Psychology is because things that were random at first, now have meaning and explanation to them… its very interesting, to understand things… I want to know" (Student 5)

All of these comments indicate a thirst for knowledge and wanting to know more. By viewing their learning in this way, rather than a syllabus to be learnt for an exam, they were more engaged in learning and ultimately less stressed by the exams they had to take. Moreover, subject-specific goals have been seen in the research as an illustration of a mastery mindset (Conley, 2012). This was usually focused on future attainment and success (Conley, 2012; Cook and Artino, 2016) and how attainment in exams could influence their futures (Putwain, 2007a). Some of the students still displayed high levels of exam stress despite a mastery mindset, supporting research that indicated this could be the case (Dull, Shleifer and McMillan, 2015).

4.6.2 Performance

In contrast, performance goals were discussed by all of the students to varying degrees. It is suspected that this was because of the performance-based system they were in, as mentioned previously. The existing literature describes the school system as performance-based, where grades and achievements are crucial (Gorard, 2007; DfE, 2013).

Comments were made that indicated the students were aware of the performance system:

> *"I'm doing English now cos if I get to University it will look good that I'm doing that as an A level" (Student 2)*

> *"For my future, I want to go to University, I want to pursue a career in a good subject… I just don't want bad grades to be shown on my CV" (Student 3)*

> *"I looked up what grades I needed (for career) and what you need to do and I set myself a real high target" (Student 6)*

These comments show the importance of grades to the students. Student 3, for example, indicated that in order to go to University, she required certain grades. This added significantly to the stress of the exams, as they would directly impact her future goals. Similarly, some remarks were about specific grades, targets and pressures to achieve:

> *"I was quite disappointed with my English because I got a 6, which is a B, and I was hoping for an A" (Student 1)*

Student 1 felt disappointed with her grades following their results. These were explained using performance goals and expectations. She didn't comment on what she had learnt or enjoyed in English, only that the grade would be of use for her future.

> *"Having such high target grades did push you to do well… I want to beat it (the predictions)" (Student 1)*

> *"They (predictions) were motivating because since they were low I wanted to prove them wrong a bit" (Student 5)*

These students expressed that predicted grades and targets served a purpose, but this was within a performance system. They wanted, and were motivated, to achieve good grades, either in line or better than their predictions. Some made comparisons to others and the pressure this caused, indicating performance-based motivation:

> *"I think it is competitive as well… especially if you are in a group of friends and you are all wanting to go on and do well… I think it can be bad" (Student 1)*

> *"I was a bit disappointed… but then I went back in and compared my results to everyone else, I felt really proud" (Student 6)*

The students discussed the pressure to achieve, put on them by others and themselves. This reflected the performance mindsets commented upon by previous research (Putwain, 2009b). Importantly, the pressure put on oneself to achieve added significantly to stress levels (Giddens, 1991). This was particularly the case with important exams, as was the effect success or failure might have (Sung, Chao and Tseng, 2016). In addition, the students commented on their desire to compare results with others: this indicated a performance-based mindset and has been cited as a source of stress (Chamberlain, Daly and Spalding, 2011).

4.6.3 Approach

Alongside these two dimensions of mindset (mastery or performance), the AGT framework described the dimension of 'valence'; approach or avoidance (Elliot and McGregor, 2001). Approach in this instance, referred to the way students positively pursued goals and tried to do things to help themselves in relation to their exams.

This was seen in comments relating to independence and doing things for themselves. Approach goals were demonstrated in those who were self-motivated:

"I wouldn't ask them for the straight answer but if I get them to help I'll probably get it eventually" (Student 4)

"I don't think I had any problems with that (stress), but with anxiety it is motivating… it can be motivational" (Student 5)

Student 4 wanted to solve problems by himself and overcome challenges. This motivation was interpreted as an approach mindset, and may have helped reduce stress in exam situation: he would use this mentality and skill to answer harder questions, rather than panic. This may have also helped in preparing for the exams. Student 5, similarly, describes some stress as motivational and how it helped him. This indicated an approach mindset.

In addition to independence showing approach mindsets, those who accessed additional support for learning or wellbeing also displayed a level of 'approach':

"On the day just before the exam me and my friend came in a bit earlier and so went to maths and Sir just went over the stuff that he thought we were struggling with" (Student 2)

"Definitely more support would have been helpful" (Student 5)

These students either asked for more help or wanted more help, indicating that they were wanting to do more in order to do better. This may have been in relation to studying, directly, or help to overcome some of the emotions and stress. Also, some students indicated a new and developing sense of challenge and wanting to learn now:

"I am really enjoying it because it's new… it's exciting… you're wanting to learn about it and you're wanting to find out more" (Student 1)

"The coursework has been a lot (harder), but I find it really good, interesting" (Student 3)

"Even if I don't want a career in it or whatever, I will love to understand it. Like computers, I don't want to do anything with them, but I still want to know how they work" (Student 5)

These comments are very interesting as they were interpreted as showing these students were increasingly 'approach' in their mindsets. This change was discussed by the students as being as a result of their revision and exam experiences. This was seen in students who were both not very stressed (Student 5) and those who were stressed by their GCSEs (Student 3). One could infer from this, the possible value of mock exams, but there seemed to be more potency in the real exams and the effect of doing GCSEs had a marked change on their approach mindsets.

Approach goals were discussed by the students and showed that they were motivated to be successful and independent. Cook and Artino (2016) found approach goals were synonymous with achievement. Approach goals have been cited as important in motivation (Elliot and McGregor, 2001; Conley, 2012) and the comments made indicated the students were motivated and driven to do well. The students demonstrated that their focus had changed following the positive experiences of their exams and that most were now displaying more approach goals than avoidant. This supported the idea that approach goals are associated with positive appraisals as a result of success and lead towards future successes (Putwain *et al*., 2012; Putwain, Remedios and Symes, 2016).

4.6.4 Avoidance

Avoidance goals appeared to be where students actively disengaged or avoided strategies to help themselves, either to rely on others, give up or blame various aspects of their results on others.

For example, some didn't access help and didn't think it would help:

> *"We have not really been aware of the systems to get that support… if I was feeling low, I would not know which way to go about it or who to approach" (Student 1)*

> *"I think it would (help wellbeing) but I don't think it would have impacted my grades" (Student 1)*

Student 1 talks here that support wasn't needed for her. However, this could be interpreted as either that she doesn't need it, or that she doesn't know how it would have helped. She commented that help with her wellbeing wouldn't have affected her results indicates a possible lack of understanding of the connection between the two. In any case, these comments demonstrate an avoidance mindset. Some students commented on helplessness and acceptance, as well as blaming others or the system:

> *"It was different in different departments, we had more help in certain departments that we did in others" (Student 1)*

> *"I felt like I wasn't taught much in that subject… so that's how I failed" (Student 3)*

> *"I just don't revise that much. I tried revising but I couldn't" (Student 4)*

Many of the students made comments relating to acceptance and helplessness. This may reflect the way in which the teaching is delivered and that the exams may be one

of the first times they are required to study independently. This may have come as a shock to some, and they may not have had the skills to do so. Students mentioned various poor strategies during their revision or in their exams:

> *"Like my maths I always tried to avoid it as much as I could… the things you enjoy you seem to make more revision for" (Student 1)*

> *They didn't teach us how to do that, like, told us, how to revise… I think they never know anything about the other students (wellbeing) as well" (Student 3)*

The students in this research talked about avoidance as causing helplessness and increasing blame on others. Avoidance goals are strongly associated with helplessness (Conley, 2012). Helplessness and reduced motivation are maladaptive outcomes related to avoidance goals (Dull, Shleifer and McMillan, 2015). The students made comments about wanting specific support, but recognised the challenge of this: different support will be needed depending on their goals, appraisals and approaches (Putwain *et al*., 2012). Clear from the students' comments and the previous research was that avoidance reduced engagement and can affect future performance (Putwain, 2009b; Cook and Artino, 2016). Although avoidance goals are the least desirable mindset (Chiung-Huang, 2013) it was not clear from research how to avoid this mindset (Rosenzweig and Miele, 2016), particularly if individual differences in genetically determined responses to stressful situations are to be believed (Yeh *et al*., 2009).

4.7 Summary of findings

How do Year 12 students feel their GCSE experiences affected their wellbeing and performance?

The students involved in this research clearly indicated that they all, to varying degrees, experienced exam stress. Although this research was conducted a few months after they received their results (and nearly 6 months after they sat their exams), they were able to recall the feelings they had before, during and after the exam period.

These findings therefore support previous research, such as Denscombe's (2000) study that referenced the negative effects exam stress can have on wellbeing. Similarly, it has been indicated that 'academic stress' is a significant cause for concern in schools (Connor, 2001), due to impaired cognitive skills (Chapell *et al*., 2005) and other maladaptive outcomes (Dull, Schleifer, and McMillan, 2015). Putwain (2008b) reported the negative effects on one's self-efficacy as a result of negative and stressful situations, which was also recognised in these students. In conclusion, the students felt that exam stress did negatively affect them, in terms of both their wellbeing and their performance in the exams. Although individually their response varied in terms of effects and severity of stress on them, the interpretation of the collective understanding was that their wellbeing was impaired and this was thought to have impacted on their performance.

What factors contributed to, or alleviated, levels of exam stress (personal, social and educational)?

The students commented upon many factors that contributed to their levels of stress. They were able to describe in detail a number of factors and they interpreted how these impacted on either their learning, revision, exam strategies or their wellbeing. These

comments therefore supported the previous research findings that found similar sources of exam stress. Most notable were the comments made relating to the performance system (Torrance, 2004), feeling overwhelmed and not being prepared (Chamberlain, Daly and Spalding, 2011). Also, similar to previous research (Denscombe, 2000), students reported a lack of control and feeling helpless. Many comments referred to the fear appeals used by staff and the increased stress that this caused (Putwain, Remedios and Symes, 2016).

In contrast, the students' referenced factors that helped them cope with exam stress too. Again, these have been reported in previous research. For example, parents and friends were generally regarded as sources of support and help, as cited by Berry and Kingswell (2012): parent relationships and parental engagement were both key factors to this help (Harris and Goodall, 2008). Good experiences prior to the exams (Putwain *et al*., 2012) led to increased confidence and more positive appraisals of the exams, which reduced or helped cope with exam stress: a common finding of previous research (Putwain, Remedios and Symes, 2016).

Can theories, such as Achievement Goal Theory, be used to explain the individual differences in levels of exam stress?

The following table summarise the students' levels of stress, interpreted from the transcripts, and how they were categorised into the AGT framework (Elliot and McGregor, 2001).

Table 7. Students' levels of perceived stress and AGT categorisation

	Level of stress	**AGT categorisation**
Student 1	High	Performance-avoidance
Student 2	Medium	Performance-avoidance
Student 3	High	Performance-avoidance
Student 4	Low	Mastery-approach
Student 5	Low	Mastery-approach
Student 6	Very High	Performance-avoidance

Previous research suggested that goals and mindsets impacted on performance (Cook and Artino, 2016) and exam stress (Elliot and McGregor, 2001). Also demonstrated was that students had multiple goals in relation to their education: this was commented on by Conley (2012). Within this research, the model has been applied to look specifically at exam stress and which mindset might reduce perceptions of exam stress. These perceptions may indicate either a reduction in exam stress, or a perceived ability to cope with it: either results in fewer negative implications. From the table, there are links between the 2 x 2 framework and the levels of exam stress. The findings suggested that the students with 'approach' goals perceived themselves as having less exam stress than the students with 'avoidance' goals. This was the same as has been commented on by previous research: a fear of failure (Hall *et al*., 2004) was an indication of avoidance, resulting in disengagement (Cook and Artino, 2016) as a way of protecting against the threatening situation. This can be mediated by self-efficacy (Putwain, Remedios and Symes, 2016), a trait reported to be higher in

‘approach’ goal students. Similarly, those with ‘mastery’ mindsets had less exam stress than those with ‘performance’ mindsets. This is supported by some research (Elliot and McGregor, 2001; Conley, 2012) but contradicted other findings that suggested mastery mindsets could in fact increase stress (Sideridis, 2007; Chiung-Huang, 2013).

To answer the research question therefore, the findings indicated that it was possible to identify students based on their mindsets, using the 2 x 2 framework (Elliot and McGregor, 2001). This can be used to identify likely levels of exam stress in students and those more susceptible to the detrimental effects of exam stress on their wellbeing (Denscombe, 2000) and performance (Cook and Artino, 2016).

CHAPTER 5: CONCLUSION

In the conclusion, the main findings are used to answer the research questions and there is consideration of how these findings complement and contribute to the existing research literature. These findings were identified during the second phase of the research: the first phase did not yield any conclusions, as discussed in Chapter 4. The research is critically reviewed in terms of evaluating its contribution as well as its limitations. Finally, the implications for practice are considered and future research areas are discussed.

5.1 Answering the research questions

- How do Year 12 students feel their GCSE experiences affected their wellbeing and performance?

Individually, there were differences in how the students were affected by exam stress. Some reported feelings of stress explicitly and other symptoms related to anxiety and worry. These comments indicated some of the physiological and psychological effects of exam stress. Some commented on long-term effects on their identity, confidence and learning. However, others reported more positive feelings having been through the exams and done well: a new confidence and self-belief had developed. These comments infer that some were able to cope despite the presence of exam stress.

Similarly mixed opinions were given in relation to the effect of stress on performance. In contrast to previous research (Dull, Schleifer and McMillan, 2015), some didn't think it affected performance, or that the stress may have even improved performance,

causing them to take the exams seriously and be more motivated. However, some did feel the stress interfered with learning, revision and the exam itself. This was a more common finding and exam stress was generally viewed negatively in relation to their performance. The results suggest a paradox remains in that a variety of feelings was experienced and reported, unrelated to achievement level. The exams were responded to differently by different individuals and their recall of the exam stress varied.

- What factors contributed to, or alleviated, levels of exam stress (personal, social and educational)?

Students were able to identify many sources of stress, increasing the exam stress that they felt. These supported previous research findings (Parker *et al.,* 2014; Putwain, Remedios and Symes, 2016), but also determined the specificity of these sources, the severity and the differences between the students. These nuanced responses to the questions indicated that appraisals, mindsets, self-esteem and other factors may influence how sources of stress are interpreted and dealt with by different students.

Many similar sources of stress were reported by the students. One of which was the school system which was identified as a performance-based system. Pressure from staff was commented on, as was the need for good grades. A lack of support was in addition to the perceived pressure from staff, family and peers. Any support that was offered was identified to be for learning, but support for wellbeing or stress was not received by many of the students. It was felt by the students that this could be improved upon and would have helped them cope.

Interestingly, some students were able to comment on factors that reduced exam stress. In some instances, these were the same as the sources of stress for other students, such as parents and teachers. Individuals made comments on various

aspects that helped reduce exam stress, or helped them cope, while others found the same sources more stressful and unhelpful. For example, the pressure to achieve was interpreted differently in relation to stress level and performance: this may vary depending on their goals and mindsets, as discussed below.

- Can theories, such as Achievement Goal Theory, be used to explain the individual differences in levels of exam stress?

Achievement Goal Theory (Elliot and McGregor, 2001) was used and through interpretative analysis, the students were categorised into the framework. They were categorised based on their comments made in relation to performance, mastery, approach and avoidance goals. The students in this study made numerous comments that were interpreted as indicating certain mindsets and goal orientations. This was therefore used to explore the differences between the students. Similarly, this research demonstrated that by identifying mindsets in this way, it was possible to identify students who were more stressed and possible reasons why. This research therefore supported previous findings regarding student goal orientations. This framework was also used to explore exam stress and provided evidence that the model can be used in this way. The implications of this are that it may be possible to identify which groups may be more vulnerable to exam stress, offer different ways to support them, and recognise the preferred goal orientations to reduce exam stress. However, in contrast to some previous research (Pekrun *et al, 2006*), mastery goals were linked to reduced levels of exam stress. This has been identified as the better mindset for learning (Dull, Schleifer and McMillan, 2015) but there are mixed results in relation to levels of exam stress. This leaves questions as to which goal mindset is most desirable, and why it varies. Perhaps it is not a causal relationship as the theory suggests (Elliot and Pekrun,

2007). Similarly, it may be concluded that achievement and coping with stress leads to a certain goal focus, not the other way around.

What can be concluded, by using this framework, is that individual differences were seen in levels of exam stress and in the students' goal orientations. This was unrelated to their attainment level which was interesting: this supports previous findings that exam stress can be experienced by all (Putwain, 2007a). However, the use of this theory doesn't fully explain individual difference and it is noted that other factors play a role in coping with exam stress; self-esteem, appraisals and goal setting methods are influential and cannot be ignored. These factors are not part of AGT so it may be too simplistic to apply this framework alone.

5.2 Critique of the research

The findings described above demonstrate some of the strengths of this research. The addition of qualitative research adds to the understanding of exam stress (Putwain, 2007b) and the qualitative findings have been justified through a robust analytic method (*IPA*; Pietkiewicz and Smith, 2012). The careful implementation of a high-quality methodology has produced findings that support previous literature or add to our understanding of exam stress. By using IPA, the double hermeneutics within the interpretation of interviews allowed key themes to be accurately identified. In addition, the use of the Achievement Goal Theory framework (Elliot and McGregor, 2001) enabled more robust conceptual analysis to be undertaken.

In addition, the research has contributed to the existing literature in a trustworthy manner (Yardley, 2000). This was commented on in section 3.9, where trustworthiness was to be aimed for, and demonstrated through consideration of a number of factors.

A systematic search of previous literature was offered with critical appraisal to identify knowledge of the topic and gaps for further research. Use of IPA aided the accurate reporting of participant views and there was ethical consideration and approval gained (see section 3.10). The methods chosen were suitable for investigating the topic area. The use of IPA allowed detailed analysis of individuals and as a group, from which the findings and discussion were presented clearly, with reference to participants' views, interpretations and links to previous research.

Furthermore, the positionality of the research was made clear, as was the awareness of the researcher's interpretive bias, ensuring transparency. The research added to theoretical understanding, awareness of the systems that affect students and can therefore be used to inform and improve practice.

However, there were several limitations encountered during this research. To begin, the literature search identified the confusion between terms used in this field. 'Test anxiety' and 'exam stress' were both reported but may be used in different ways to observe different things (Putwain, 2008b). This research focused on 'exam stress' specifically and aimed to identify physiological and psychological characteristics in relation to stress caused by public exams. However, the interchangeable nature of the terms means that more research may be needed to distinguish between them.

Interpretative Phenomenological Analysis (IPA) was used as the method of analysis. This is a well-regarded tool, but this method limits the numbers of participants one can use. This project involved six students, which produced lengthy transcripts (data) to analyse. Even with this small number of students, it was hard to handle the quantity of data. A criticism of this small case-study design is that the field may benefit from wider research with larger groups to identify stronger trends, patterns and generalisable

characteristics. That said, the qualitative approaches add to the existing literature (Denscombe, 2000) by adding specific detail that can be interpreted.

Using IPA was not the only restricting factor of this research: it was also restricted to using Achievement Goal Theory to explore individual differences. AGT proved to be beneficial in understanding differences in exam stress between the students, but the use of other frameworks, models and theory could have added further to the knowledge gained. Also, by using this framework for one of the research questions, it limited the inductive nature of the research. The framework guided the interview schedule and therefore, the responses given. Other theories may have proved applicable if the research took a more inductive line of enquiry. That said, AGT had been suggested through other research (Sideridis, 2007; Putwain and Symes, 2012) and was therefore suitable: the research questions were able to be answered using this framework.

Continuing to critique the analysis, the research questions were used as super-ordinate themes, which eased the analysis. However, this made the process more deductive as a result. It could be argued that the responses of the students were limited by this process. However, by using interpretation direct from individuals and their interpretations, as well as by the researcher, it allowed for inductive creation of the comments and sub-themes: a balance of inductive and deductive analysis was therefore found. Important within IPA is the inclusion of both descriptive and conceptual analysis. This research may benefit from further conceptual ideas, but this relies on the skills of the researcher to enable this. That said, by including the third research question and the conceptual framework of goal orientation and mindset, this helped add to the conceptual interpretations made.

The findings of this research demonstrated the value of qualitative research. This study was able to share students' views that they experienced exam stress and that they believe it had an effect on them, in terms of performance and wellbeing. By using IPA, this research was able to comment and interpret individuals' experiences of a specific phenomenon in order to gain an understanding of what it was like for them. This was of great importnance and enabled this research to contribute to what was already known in this field. The findings both supported previous findings and contradicted others (Putwain, 2009a; Putwain *et al.,* 2012). This discrepancy was identified in the literature review, and even within this study, differences in opinion were seen, so it could be concluded that no definitive answers were found in relation to the research questions. Nevertheless, the addition of qualitative research has furthered our understanding of the phenomenon and highlighted areas for further investigation (see section 5.4).

Some individual differences that were identified in the previous literature were not included as part of this research. Gender, for example, was not included as part of the findings although differences between genders were seen. This was primarily because none of the students commented on gender as being a significant reason for their level of stress. As such, it was judged to not be an important factor to the students and was therefore not commented upon in the findings. However, previous literature have identified gender as an individual difference that is linked to levels of exam stress and as such, it could be investigated further. This research focused on other areas of individual differences, namely the students' goal orientation and mindsets.

Similarly, this research has not included any biological differences in its literature search or findings. There is believed to be neurological differences that can affect susceptibility to stress, abilities to cope with stress hormones, such as cortisone, and

biological susceptibility to the effects of stressors (Cook, Chaplin and Stroud, 2015). These were not included as the methodology selected would not have illuminated such differences: a quantitative methodology may be needed to investigate these differences in more detail.

5.3 Implications and contributions

5.3.1 For school practice

This research has highlighted the need for school staff to provide support specifically for students who have high levels of, or susceptible to, exam stress. Public exams are unique phenomena that can cause high levels of stress: students felt stressed during the learning, revision, the exams themselves and waiting for their results. This research has also raised awareness of some of the risk factors within groups of students, such as the individual differences in goal orientation and mindset which can affect levels of exam stress and their ability to cope. By identifying these areas, school staff would benefit from training or understanding of these factors. It is believed that this will improve the students' wellbeing and can influence their exam performance (Struthers *et al*., 2000). School staff would benefit from training to increase awareness of how they can contribute or alleviate stress: awareness of the performance-based system, mindsets and learning styles, performance appraisals and the use of fear appeals.

Importantly, this research has clearly shown the need for individual approaches to be considered, both in further research and in practice. The nuanced individual perspectives of the exams indicated that there are many factors that can affect them in relation to exam stress. Their personal perspectives, mindsets and goal strategies

resulted in varying results and levels of stress. As such, these factors should be considered when trying to support students.

Furthermore, in terms of school practice, there are possible implications for the use of mock exams, revision sessions, and wellbeing interventions. The knowledge gained regarding goal orientations can influence what wellbeing support might help and how revision can be supported by teaching staff. The students commented on the mock exams, invariably as unhelpful, although it has been shown that mock exams can effectively prepare students, reducing their stress levels (Daly, Chamberlain and Spalding, 2011). School staff may also consider the involvement of family and peers to successfully support individuals.

In addition, advice for students could be offered: most students identified the need for more support in relation to student wellbeing and would welcome support in this area. This type of support could be offered by school staff, or specialists in mental health, such as educational psychologists. Similar to the staff, students should have an awareness of their goal and mindset orientations and given strategies to cope with exam stress.

5.3.2 For educational psychologists

Educational psychologists (EPs) can also gain from this research. It has demonstrated some of the ways to support school staff in relation to exam stress. Through my work as a trainee educational psychologist, I have been aware of how schools are talking about exam stress and that they wish to do more for their students. EPs are perfectly positioned to deliver training and advice on this issue. Training needs are identified as are opportunities for direct work, such as workshops and group or individual support for students.

Furthermore, although organisational change and development takes time, educational psychologists are working closely with schools as 'critical friends' and skilled professionals. The role therefore enables EPs to operate at the organisational level, contributing to policy change, practice development and promoting cultures that support students. Policy development and change could reflect some of the research findings presented in the way school staff approach exams with students and the support on offer. Systemic and organisational work is an area that EPs can be involved in and is often appreciated by schools (Fox, 2003).

5.4 Future research

As stated in the critique of this research (section 5.2), gender differences were not explored as part of this research, and yet it has been identified in previous research to link to exam stress (Chiung-Huang, 2013). This could be explored to understand how and why gender differences may exist. Similarly, investigation into adolescent neurology could prove valuable in increasing our understanding of stress responses and exam stress in students (Cook, Chaplin and Shroud, 2015). This is following advances in methodology, such as the use of fMRI and accurate clinical research. This research took a psychological perspective of exam stress, with the aim of understanding the systems in schools to support students, but a different perspective (a more medical perspective) may be of use to understand the phenomenon in a different way.

As is often the case with qualitative research, the participant numbers were small and there is therefore an ongoing need for further research to support these findings. This area of research would benefit from more qualitative research, as identified by Putwain (2007b). That said, in relation to this research, the use of the AGT framework could be

applied to larger participant groups by using different methods of research. By incorporating more students, a clearer understanding of how mindset and goal orientation relates to levels of exam stress.

Furthermore, future research could focus on specific areas of individual differences. This may involve single elements of the AGT framework, such as mastery-avoidance (e.g. Sideridis, 2007). Alternatively, research could be conducted using other models to explain individual difference, rather than AGT, such as the Expectancy-Value model (Conley, 2102), for example.

Another area of research to be considered when investigating exam stress and ways to support students, would be with use of the eco-systemic model by Bronfenbrenner (1979). This model explains the varying systems around a young person and how these impact on them. Consideration of the factors in each of these levels and how these may impact on a student's stress, wellbeing and performance in relation to exams would be of interest. This would connect to this research as it would be identifying other areas that contribute to or alleviate stress levels, identify individual differences, and it would be of use for schools to help support students.

Finally, exam stress was explored broadly in this research, as a phenomenon that can affect students in a variety of ways and for a variety of reasons. It may be beneficial for research to explore specific areas of exam stress, like the causes, or the effects rather than all together. For example, research on student appraisals (Putwain and Symes, 2014) and the use of fear appeals (Putwain, Remedios and Symes, 2016) have reported these to be significant moderators of a person's level of exam stress and worthy of further investigation.

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APPENDIX 2: EMERGENT THEMES

(2) Emergent themes ✓

	St. 1	St. 2	St. 3
RQ1 – effects on well-being and performance	[High achiever, high stress] Rated year 6/10 (11) Subject specific stress (6) Worry (8, 25) and stress (15, 26, 48) Stress in actual exams (9, 39, 44) High pressure – 2 years of work (13), matters for future (21, 27, 28) Bad previous experiences (24) Low confidence/self-esteem despite high achiever (34, 42) Friendship issues – competition and stress (35,43) Lasting effect – stress (49) Happy with results – shocked at passing (3) Some disappointment (certain subjects) (4) Did well in comparison to others (33, 38) Stress impacted performance (40, 44)	[low achiever, med/low stress] Symptoms of stress (6) Nervous in exams (7) Acceptance/defeat in some subjects (8, 9) – self-esteem? Worry after exams (11) More anxious now (37) – know how hard they are Happy with results (3) Stress impacted/blocked revision and learning (6, 13)	[medium achiever, high stress] Disappointment and upset by results (6,7,8) Found it stressful (9, 16, 30, 54) and hard (9, 20) Lost, helpless (12) Unhappy – in comparison to previous years (24) Stress at resits, more exams in future (48) Increased self-belief and motivation after (44, 49, 50, 53) Dislikes results – did 'awful' (6, 8)) Much lower than predicted (6) Happy with others (6,46) Didn't know what to revise – panic (19)
RQ2 – contributions or alleviations on level of stress	School pressures – high predicted grades and aware of them (1), focus on learning and revision (16) Unfair predictions and no control over them (2) No control over subject choices (30) Performance based system (30) Too much to learn (8, 49) Number of exams was hard (9) Supported too late (13) Lack of wellbeing support (14, 17), wanted more (20, 23) Independent work expected (16) Taking one early – neg experience/result added to stress (24) Self – future (21, 27), performance pressure (21) Plans made (27) Comparison to others (33, 38) Peer pressure (35,43) Lack of exam experience (39, 45) Low confidence (42, 48) Not knowing answers in exams – panic (44) How much they matter – system pressure (49) Home life carries on, external pressures of life (19) - School support for learning (5, 16), teacher relationships helped (18), small group size (5) - good mock experiences and practice papers (47) - desensitisation after a few exams (10) - priority year group in school in Yr 11 (12) - chance to retake, safety net (22) - Peer support (35) - experience now of exams (39, 45), coursework beforehand (41)	Poor revision strategy (4) Lack of exam experience (5) start of exams (7, 10) Performance goals (5) Pressure to revise, blocked revision (6) Subject specific stress (8) Unknowns after exams (11) Performance system – teacher check up (16) Some peer pressure during revision (18) Learning gaps, poor teaching (21) Future ambitions (24) long standing (26) Family pressures, older sisters (25) – performance Pressure on self (31, 34) Bad experience (now) (37) Didn't feel it, but did get in way of revision (13) - low predicted grades set (1) - interest in some subjects, teacher skills (9) - not bothered by grades in some subjects (9) - teacher support in some subjects (12) - teacher support for learning (15) - support with revision from teacher (16) - good peer support for learning (17) - support for stress (19) – talk and strategies - individual support accessed (20) - avoided comparison with peers (35) - self belief and confidence (36) - good exam strategies, self calming (38)	Teachers set predictions and aware of them (1) wanted some higher (4) Poor teaching of some subjects (7) Found revision very hard (9) left independent (28) Unknown subject matter/ too much (10,19) unprepared (14,19, 55) Lack of understanding in subject (22) Peer distractions and poor class control during learning (11) Didn't know what to do to help self (12,55) Long time stress-whole year (16) Too many subjects and exams (17, 38) couldn't cope Time pressures and deadlines (18, 38) Grade boundaries, varying info (25) No wellbeing support (29) wanted more (37,39) High parent pressure (30, 52) and strain on relationship (31) and no support (32) Sibling pressure – been there done that (33) Peer distractions (34) and concern for others (35) Peer pressure (51) Long term future ambitions high (41) Fear of resits and further exams (48, 54) - not influenced either way by predictions (3) - felt ready for some subject exams (13) - liked subject, revised more (15, 46) - coursework to boost grades prior to exams (21) supported coursework (26) - extra support during exam time and revision groups (27) - experience after, higher motivation (43, 50, 53, 56, 57)
RQ3 – AGT and individual difference	Subject specific goals (4,6) future focus (29) High target grades – motivated (37) Avoidance of specific subjects (7, 34) Normalised stress – coping/avoidance? (15) Independent revision – approach, diff for diff people (16) Didn't access wellbeing support, didn't know how to – avoidance (17) Pressure on self to perform for future job (21, 27) High motivation due to LT future plans (27) Support wouldn't have improved grades – performance, avoidance (23) Others were more stressed (26) – more help needed Learning something new now (31) – approach Performance is motivation (32) but also learning new things Performance – comparison to others (33, 36, 38,43) Avoidance – pessimistic going on (42)	Acceptance of teacher predictions – avoidance (2) Low motivation – avoidance, but low stress (4) in some subjects (9) Blame teachers/lack of practice (5) Subject specific goals (8) mastery (9) – more stress Last minute stress – performance? (10) Time to recover, high worry (11) Teacher support – approach (12) No recognition of stress (13, 22) – avoidance Manageable stress in some subjects – mastery approach (14) Support for managing stress welcomed – approach (19) Sought individual support (20) Now – recognition of responsibility (23) – approach developing Future ambitions – performance based (24) long standing. High motivation (approach) (29) Consistent goals (33) Family pressure vs motivation (30) Performance goals (34)	Performance system (1, 29, 41, 47, 51, 54) Not influenced by predictions (avoidance?) (3) Wanted some predictions higher (5) subject specific – mastery? Upset with results overall (6) – performance Blame on teachers – avoidance? (7, 8) contradictions with mocks/real (7) Too much to revise (avoidance) (10) Helplessness to situation (12) – avoidance Gave up if didn't like subject (14,15) avoidance, mastery Too many subjects, options, exams – helpless avoidant (17) Didn't know subject matter – didn't revise (19, 40) avoidance Coursework to boost grades (21) performance Subject specific strategies, revision, enjoyment- mastery (23) Made use of extra sessions laid on and support – approach (27) Parent pressure to perform (30, 52) Sibling results – performance pressure (33) Peer distractions – avoidance (34)

		No comparison to others – avoidance? Mastery? (35) Experience led to new motivation – approach (37, 39)	Comparison to others during and after (36, 51) Wanted more help from school and home (37, 39) Future aimed at strengths (41, 42) approach Likes the challenge now (45, 49) Further exams and results – avoidance (48)

	St. 4	St. 5	St. 6
RQ1 – effects on well-being and performance	[medium achiever, low stress] Stressful experience (5, 6, 40) Helplessness and acceptance (3, 11, 12, 22) Sleep issues (15) - didn't feel stressed (17, 22, 42) Felt ready and prepared (18) Happy with results (3) Didn't revise much (8) - No effect of predicted (28)	[high achiever, low stress] Knock to confidence (4, 10) Stressed before exam (9) Got used to level of stress (43) Didn't know answers – depressed (44) Pressure on self (46) - Positive person (9), motivated - highly motivated by LT goals (31) Recognised stress afterwards (26) Overall, happy with results (3) but worse than predicted self (4) Would do better now, with experience (13)	[medium/high achiever, high stress] Stressful (13, 17, 50) built up (23) Low confidence (4) Physical symptoms, shaking (18), couldn't write (18) Scared (18) panic (19) Cried after (20) Some disappointment (56) Worse than previous years (24) Friendship issues (38) Wanted support (44) - proud (56, 61) Did worse due to stress – perception (25) Pleased with results overall (4, 55) Didn't work hard enough (7) stress in way?
RQ2 – contributions or alleviations on level of stress	Early set predictions (1) – but accurate Repeating work was stressful (5) Performance system (5) Time pressures in exams (6, 21, 40) Having to repeat and revise things (9, 20) Lack of control (11) acceptance Lack of sleep (15) Didn't access wellbeing support (24) not needed? Lack of interest in subject (27) Some comparison to peers (35) Self expectations and pressure (36) - happy with predictions (2) - coursework helped (4) - Lack of reflection (7) - Enjoy learning new things (9) interest (13) - some school support for revision/learning (10) - acceptance (12, 22, 35) - mock experiences helped (16, 23, 38) - Felt ready for exams (18) despite lack of revision - support for learning/revision (19, 21) - exam strategy (39) - No clear future, just enjoy learning (29, 40) - not performance (33, 34, 42) - low family pressure – proud (37)	Predictions set by staff early on (1) Wanted to prove staff wrong (6) High expectations on self (4, 23, 40, 44, 46) Teaching and learning gaps (7) in specific subjects (14) Support in school was disorganised (19) Prior to exams (9) – good thing Lack of experience – seriousness of exams (11) Better mocks in terms of experience (12) Too much to learn/revise (15) new material (42) School pressure (23) Some family pressure (36) but supportive Peer pressure and support (21) bad influence (22) High ambitions and long term goals (31, 33) role models (32) Performance system (35, 39) - low predictions (2) – irrelevant to student (5) - high confidence (4, 8) motivation (28) - good experiences (8) taking some early. Now (42, 47) - revision strategies (8) - low staff pressure, achieving well (12, 24) - exam strategy (15, 45) - support in school for learning (17) not for all (24) - family supportive (20) - peer support (21) similar to student. Low pressure (41) - flexible future plans, choice, control (34)	Predictions set by staff and aware of them (1) would have changed them though (2) Bored and frustrated by some subjects (5) Lots to revise (7, 21, 43) Revision made it worse (23) – more real, too much to do Unknown subject matter and exams (8, 21) unprepared (21) Self pressure (9, 14, 21, 23, 36, 46, 48, 53) Not enough support – learning (11, 12, 22, 29, 32) varied (31, 41) Future plans (15) high ambitions (46) long term (47) Unknowns – exams (16, 22, 26) Stress right before exams – situational (17, 18, 26) Performance system (23, 34, 37) Time pressures in exams (28) Poor exam strategies (28, 30) no input No stress support or wellbeing (33) School pressure (37) Pressure to support friends (38) Comparison to others (56) External life pressures (2, 6) - not affected by predicted (2) would have changed some? - some school support (10, 41) - experience help after first one (20, 60) and now (51) - mock exams didn't help much (27, 59) - parent support (35, 57)) - some peer support (40) - coursework helped (42) - Having choice, control (54) now
RQ3 – AGT and individual difference	Did worse in one exam – blame, avoidance (3) Blame, lack of control (11, 12) Acceptance of failure in some subjects (mastery) (12, 22) Wanted to learn, not repeat – mastery (5, 13, 30, 31, 40, 41) Learning new things is good, revision bad (9, 31) mastery Not affected by predicted – mastery? (28) self motivated Lack of reflection – avoidance? (7) Disliked revision – avoidance (8, 14, 20) Learning support – performance system (19, 25, 33, 34, 39, 42) Self-motivated (25, 31, 35, 40) Interest in subject – mastery (26, 31, 32, 40) Exam strategies – performance, approach (39)	Just wanted to do best – self-motivated (5) independence (20) Prove to others, ability – performance (6) Recognise needs (7) approach. Critical of others – avoidant (29) Having results by taking some early and coursework (8) – performance Generally low stress person (9) stress is motivating Wanted more experience, mocks, practice (12) – approach Wanted more support – learning, mastery, approach (25) Exam strategies (15, 45) – performance based (16) – approach Want to learn more (properly) (18, 38) Likes challenge and new things (37) Independent (23, 24) and motivated (28, 47) Recognise stress of it now (26) Big ambitions (31, 33) mastery and performance (33) Role models to aspire to (32) – approach Rejects performance system, mastery (35, 39)	Subject specific motivation – mastery (3, 6, 41, 49, 54, 58) Performance system (4, 23, 34, 52) Too much to revise so avoided some (7,43) Independent and motivated (9, 15, 36, 48, 50) Unsupported – wanted more (11) – performance Felt unprepared (21, 22) – avoidance Wanted more experience (26) Poor exam strategy and time control (28, 30) Seeked support in some subject (mastery?) (31, 41) wellbeing (44, 45) Blame on no support, learning, teachers, (32) avoidant Time pressure – friends vs revision (39) avoidance High ambitions – performance and approach (46, 47) Did best possible (55) – avoidance? Comparison to others (560 performance

(3) Clustered themes.

	St. 1	St. 2	St. 3
RQ1 – effects on well-being and performance	[High achiever, high stress] **Stress and negative feelings** Rated year 6/10 (11) Subject specific stress (6) Worry (8, 25) and stress (15, 26, 48) Stress in actual exams (9, 39, 44) **Pressure** High pressure – 2 years of work (13), matters for future (21, 27, 28) Bad previous experiences (24) **Longer term effects** Low confidence/self-esteem despite high achiever (34, 42) Friendship issues – competition and stress (35,43) Lasting effect – stress (49) **Performance** Stress impacted performance (40, 44) Some disappointment (certain subjects) (4) - Happy with results – shocked at passing (3) - Did well in comparison to others (33, 38)	[low achiever, med/low stress] **Stress and negative feelings** Symptoms of stress (6) Nervous in exams (7) Worry after exams (11) time to recover **Longer term effects** Acceptance/defeat in some subjects (8, 9) – self-esteem? More anxious now (37) – know how hard they are **Performance** Stress impacted/blocked revision and learning (6, 13) - Happy with results (3)	[medium achiever, high stress] **Stress and negative feelings** Found it stressful (9, 16, 30, 54) and hard (9, 20) Disappointment and upset by results (6,7,8) Unhappy – in comparison to previous years (24) Stress at resits, more exams in future (48) **Longer term effects** Lost, helpless (12) - Increased self-belief and motivation after (44, 49, 50, 53) **Performance** Dislikes results – did 'awful' (6, 7, 8) Much lower than predicted (6) Didn't know what to revise – panic (19) - Happy with some results (6,46)
RQ2 – contributions or alleviations on level of stress	**School pressures** Performance based system (30) How much they matter – system pressure (49) **Predictions/no control** High predicted grades and aware of them (1), focus on learning and revision (16) Unfair predictions and no control over them (2) No control over subject choices (30) **Learning** Too much to learn (8, 49) Number of exams was hard (9) Independent work expected (16) **Support** Supported too late (13) Lack of wellbeing support (14, 17), wanted more (20, 23) **Negative experiences** Taking one early – neg experience/result added to stress (24) Lack of exam experience (39, 45) Not knowing answers in exams – panic (44) **Self pressures** Future (21, 27), performance pressure (21) Plans made (27) Low confidence (42, 48) Comparison to others (33, 38) **Peer and family pressures** Peer pressure (35,43) Home life carries on, external pressures of life (19) - Good support - School support for learning (5, 16), teacher relationships helped (18), small group size (5) - priority year group in school in Yr 11 (12) - Peer support (35) - chance to retake, safety net (22) - Experience - good mock experiences and practice papers (47) - desensitisation after a few exams (10) - experience now of exams (39, 45), coursework beforehand (41)	**School pressures** Performance goals (5) Performance system – teacher check up (16) **Lack of experience** Poor revision strategy (4) Lack of exam experience (5) start of exams (7, 10) Unknowns after exams (11) Bad experience (now) (37) **Learning** Pressure to revise, blocked revision (6) Subject specific stress (8) Learning gaps, poor teaching (21) Didn't feel it, but did get in way of revision (13) **Self pressures** Future ambitions (24) long standing (26) Pressure on self (31, 34) **Peer and family pressures** Some peer pressure during revision (18) Family pressures, older sisters (25) – performance - Good support - teacher support in some subjects (12) - teacher support for learning (15) - support with revision from teacher (16) - good peer support for learning (17) - support for stress (19) – talk and strategies - individual support accessed (20) - good exam strategies, self calming (38) - Mastery/low self pressure/confidence - low predicted grades set (1) - interest in some subjects, teacher skills (9) - not bothered by grades in some subjects (9) - avoided comparison with peers (35) - self belief and confidence (36)	**School pressures** Teachers set predictions and aware of them (1) wanted some higher (4) Long time stress whole year (16) **Learning** Poor teaching of some subjects (7) Unknown subject matter/ too much (10,19) unprepared (14,19, 55) Lack of understanding in subject (22) Peer distractions and poor class control during learning (11) Didn't know what to do to help self (12,55) Too many subjects and exams (17, 38) couldn't cope **Exams** Found revision very hard (9) left independent (28) Time pressures and deadlines (18, 38) Grade boundaries, varying info (25) **Support** No wellbeing support (29) wanted more (37,39) **Self pressures** Long term future ambitions high (41) Fear of resits and further exams (48, 54) **Peer and family pressures** High parent pressure (30, 52) and strain on relationship (31) and no support (32) Sibling pressure – been there done that (33) Peer distractions (34) and concern for others (35) Peer pressure (51) - Confidence - not influenced either way by predictions (3) - felt ready for some subject exams (13) - liked subject, revised more (15, 46) - Experience - coursework to boost grades prior to exams (21) supported coursework (26) - experience after, higher motivation (43, 50, 53, 56, 57) - Good support - extra support during exam time and revision groups (27)

	1	2	3
RQ3 – AGT and individual difference	**Avoidance** Avoidance of specific subjects (7, 34) Normalised stress – coping/avoidance? (15) Didn't access wellbeing support, didn't know how to – avoidance (17) Support wouldn't have improved grades – performance, avoidance (23) Avoidance – pessimistic going on (42) **Approach** Independent revision – approach, diff for diff people (16) Learning something new now (31) – approach **Mastery** Subject specific goals (4,6) future focus (29) Pressure on self to perform for future job (21, 27) High motivation due to LT future plans (27) **Performance** Subject specific goals (4,6) future focus (29) High target grades – motivated (37) Pressure on self to perform for future job (21, 27) Support wouldn't have improved grades – performance, avoidance (23) Performance is motivation (32) but also learning new things Performance – comparison to others (33, 36, 38,43) Others were more stressed (26) – more help needed	**Avoidance** Acceptance of teacher predictions – avoidance (2) Low motivation – avoidance, but low stress (4) in some subjects (9) Blame teachers/lack of practice (5) No recognition of stress (13, 22) – avoidance No comparison to others – avoidance? Mastery? (35) **Approach** Teacher support – approach (12) Support for managing stress welcomed – approach (19) Sought individual support (20) Now – recognition of responsibility (23) – approach developing Experience led to new motivation – approach (37, 39) **Mastery** Subject specific goals (8) mastery (9) – more stress Manageable stress in some subjects – mastery approach (14) Future ambitions – performance based (24) long standing. High motivation (approach) (29) Consistent goals (33) No comparison to others – avoidance? Mastery? (35) **Performance** Last minute stress – performance? (10) Future ambitions – performance based (24) long standing. High motivation (approach) (29) Consistent goals (33) Family pressure vs motivation (30) Performance goals (34)	**Avoidance** Not influenced by predictions (avoidance?) (3) Blame on teachers – avoidance? (7, 8) contradictions with mocks/real (7) Too much to revise (avoidance) (10) Helplessness to situation (12) – avoidance Gave up if didn't like subject (14,15) avoidance, mastery Too many subjects, options, exams – helpless avoidant (17) Didn't know subject matter – didn't revise (19, 40) avoidance Peer distractions – avoidance (34) Further exams and resits – avoidance (48) **Approach** Made use of extra sessions laid on and support – approach (27) Wanted more help from school and home (37, 39) Future aimed at strengths (41, 42) approach Likes the challenge now (45, 49) **Mastery** Wanted some predictions higher (5) subject specific – mastery? Gave up if didn't like subject (14,15) avoidance, mastery Subject specific strategies, revision, enjoyment- mastery (23) Likes the challenge now (45, 49) **Performance** Performance system (1, 29, 41, 47, 51, 54) Upset with results overall (6) – performance Coursework to boost grades (21) performance Parent pressure to perform (30, 52) Sibling results – performance pressure (33) Comparison to others during and after (36, 51)

	St. 4	St. 5	St. 6
RQ1 – effects on well-being and performance	[medium achiever, low stress] **Stress and negative feelings** Stressful experience (5, 6, 40) Sleep issues (15) - didn't feel stressed (17, 22, 42) **Longer term effects** Helplessness and acceptance (3, 11, 12, 22) **Performance** Didn't revise much (8) - Felt ready and prepared (18) - Happy with results (3) - No effect of predicted (28)	[high achiever, low stress] **Stress and negative feelings** Stressed before exam (9) Didn't know answers – depressed (44) Recognised stress afterwards (26) - Got used to level of stress (43) - Positive person (9), motivated - highly motivated by LT goals (31) **Pressure** Pressure on self (46) **Longer term effects** Knock to confidence (4, 10) **Performance** Would do better now, with experience (13) Worse than predicted self (4) - Overall, happy with results (3)	[medium/high achiever, high stress] **Stress and negative feelings** Stressful (13, 17, 50) built up (23) Scared (18) panic (19) Cried after (20) Physical symptoms, shaking (18), couldn't write (18) Some disappointment (56) Worse than previous years (24) Wanted support (44) **Longer term effects** Friendship issues (38) Low confidence (4) - proud (56, 61) **Performance** Did worse due to stress – perception (25) Didn't work hard enough (7) stress in way? - Pleased with results overall (4, 55)
RQ2 – contributions or alleviations on level of stress	**School pressures** Performance system (5) Early set predictions (1) – but accurate Lack of control (11) acceptance **Learning** Repeating work was stressful (5) Having to repeat and revise things (9, 20) Lack of interest in subject (27) **Exams** Time pressures in exams (6, 21, 40) Lack of sleep (15) **Support** Didn't access wellbeing support (24) not needed? **Self pressure** Self expectations and pressure (36) **Peer and family pressure** Some comparison to peers (35) - Confidence - happy with predictions (2) - Lack of reflection (7) - acceptance (12, 22, 35) - Felt ready for exams (18) despite lack of revision - Experience - coursework helped (8) - mock experiences helped (16, 23, 38) - Support - some school support for revision/learning (10) - support for learning/revision (19, 21) - exam strategy (39) - Low pressures - Enjoy learning new things (9) interest (13) - No clear future, just enjoy learning (29, 40) - not performance (33, 34, 42) - low family pressure – proud (37)	**School pressures** Performance system (35, 39) Predictions set by staff early on (1) Wanted to prove staff wrong (6) School pressure (23) **Learning** Teaching and learning gaps (7) in specific subjects (14) Too much to learn/revise (15) new material (42) **Support** Support in school was disorganised (19) **Experience** Lack of experience – seriousness of exams (11) Better mocks in terms of experience (12) **Self pressures** High expectations on self (4, 23, 40, 44, 46) High ambitions and long term goals (31, 33) role models (32) **Peer and family pressure** Some family pressure (36) but supportive Peer pressure and support (21) bad influence (22) - Confidence - low predictions (2) – irrelevant to student (5) - high confidence (4, 8) motivation (28) - flexible future plans, choice, control (34) - Experience - good experiences (4) taking some early. Now (42, 47) - Support - revision strategies (8) - exam strategy (15, 45) - support in school for learning (17) not for all (24) - Low pressures - low staff pressure, achieving well (12, 24) - family supportive (20) - peer support (21) similar to student. Low pressure (41)	**School pressures** Performance system (23, 34, 37) School pressure (37) Predictions set by staff and aware of them (1) would have changed them though (2) **Learning** Bored and frustrated by some subjects (5) Unknown subject matter and exams (8, 21) unprepared (21) **Revision and exams** Lots to revise (7, 21, 43) Revision made it worse (23) – more real, too much to do Unknowns – exams (16, 22, 26) Mock exams didn't help much (27, 59) Stress right before exams – situational (17, 18, 26) Time pressures in exams (28) Poor exam strategies (28, 30) no input **Support** Not enough support – learning (11, 12, 22, 29, 32) varied (31, 41) No stress support or wellbeing (33) **Self pressures** Self pressure (9, 14, 21, 23, 36, 46, 48, 53) Future plans (15) high ambitions (46) long term (47) **Peer and family pressures** Pressure to support friends (38) Comparison to others (56) External life pressures (2, 6) - Confidence - not affected by predicted (2) would have changed some? - Having choice, control (54) now - Experience - experience help after first one (20, 60) and now (51) - coursework helped (42) - Support/low pressure - some school support (10, 41) - parent support (35, 57)) - some peer support (40)

	4	5	6
RQ3 – AGT and individual difference	**Avoidance** Did worse in one exam – blame, avoidance (3) Blame, lack of control (11, 12) Acceptance of failure in some subjects (mastery) (12, 22) Lack of reflection – avoidance? (7) Disliked revision – avoidance (8, 14, 20) **Approach** Self-motivated (25, 31, 35, 40) Exam strategies – performance, approach (39) **Mastery** Acceptance of failure in some subjects (mastery) (12, 22) Wanted to learn, not repeat – mastery (5, 13, 30, 31, 40, 41) Learning new things is good, revision bad (9, 31) mastery Not affected by predicted – mastery? (28) self-motivated Self-motivated (25, 31, 35, 40) Interest in subject – mastery (26, 31, 32, 40) **Performance** Learning support – performance system (19, 25, 33, 34, 39, 42) Exam strategies – performance, approach (39)	**Avoidance** Recognise stress of it now (26) **Approach** Recognise needs (7) approach. Critical of others – avoidant (29) Generally low stress person (9) stress is motivating Wanted more experience, mocks, practice (12) – approach Wanted more support – learning, mastery, approach (25) Exam strategies (15, 45) – performance based (16) – approach Want to learn more (properly) (18, 38) Likes challenge and new things (37) Role models to aspire to (32) – approach **Mastery** Just wanted to do best – self-motivated (5) independence (20) Generally low stress person (9) stress is motivating Want to learn more (properly) (18, 38) Likes challenge and new things (37) Independent (23, 24) and motivated (28, 47) Big ambitions (31, 33) mastery and performance (33) Rejects performance system, mastery (35, 39) **Performance** Prove to others, ability – performance (6) Having results by taking some early and coursework (8) – performance Exam strategies (15, 45) – performance based (16) – approach Big ambitions (31, 33) mastery and performance (33)	**Avoidance** Too much to revise so avoided some (7,43) Felt unprepared (21, 22) – avoidance Poor exam strategy and time control (28, 30) Blame on no support, learning, teachers, (32) avoidant Time pressure – friends vs revision (39) avoidance Did best possible (55) – avoidance? **Approach** Independent and motivated (9, 15, 36, 48, 50) Unsupported – wanted more (11) – performance Wanted more experience (26) Seeked support in some subject (mastery?) (31, 41) wellbeing (44, 45) High ambitions – performance and approach (46, 47) **Mastery** Subject specific motivation – mastery (3, 6, 41, 49, 54, 58) Independent and motivated (9, 15, 36, 48, 50) Seeked support in some subject (mastery?) (31, 41) wellbeing (44, 45) Did best possible (55) – avoidance? **Performance** Performance system (4, 23, 34, 52) Unsupported – wanted more (11) – performance Poor exam strategy and time control (28, 30) High ambitions – performance and approach (46, 47) Comparison to others (56) performance

APPENDIX 4: AGT CATEGORISATION

	Student 1	Student 2	Student 3
Mastery	1.32,	2.8, 2.9, 2.14, 2.19, 2.29, 2.35,	3.5, 3.15, 3.23, 3.37, 3.41,
Performance	1.4, 1.22, 1.23, 1.24, 1.27, 1.29, 1.30, 1.32, 1.33, 1.36, 1.37, 1.38, 1.43, 1.48, 1.49	2.5, 2.9, 2.10, 2.11, 2.16, 2.22, 2.24, 2.25, 2.30, 2.34,	3.6, 3.21, 3.27, 3.29, 3.30, 3.30, 3.36, 3.41, 3.47, 3.51, 3.52, 3.54,
Approach	1.16, 1.20, 1.26, 1.27, 1.31, 1.37,	2.12, 2.14, 2.20, 2.23, 2.30, 2.37, 2.39	3.27, 3.42, 3.45, 3.49, 3.56, 3.57
Avoidance	1.7, 1.15, 1.17, 1.23, 1.42, 1.43, 1.44, 1.48,	2.1, 2.4, 2.5, 2.13, 2.22, 2.35	3.3, 3.7, 3.10, 3.12 3.15, 3.17, 3.19, 3.34, 3.39, 3.40, 3.48

	Student 4	Student 5	Student 6
Mastery	4.5, 4.9, 4.12, 4.13, 4.14, 4.22, 4.25, 4.26, 4.28, 4.29, 4 30, 4.31, 4.33, 4.34, 4.38, 4.40, 4 41	5.5, 5.18, 5.20, 5 25, 5.31, 5.35, 5.37, 5 38, 5.39	6.3, 6.6, 6.15, 6.31, 6.48, 6.49, 6.54, 6.58
Performance	4.19, 4.25, 4.33, 4.36, 4.39	5.6, 5.8, 5.15, 5.15, 5.31, 5.39, 5.45, 5.46	6.4, 6.9, 6.11, 6.15, 6.23, 6.34, 6.35, 6.37, 6.41, 6.46, 6.52, 6.56
Approach	4.21, 4.30, 4.31, 4.32, 4.39, 4.40, 4.41,	5.7, 5.9, 5.12, 5 15, 5.20, 5 24, 5.25, 5 26, 5.28, 5.29, 5.32, 5.33, 5.37, 5.47	6.9, 6.15, 6.26, 6.31, 6.44, 6.46, 6.51,
Avoidance	4.3, 4.7, 4.8, 4.11, 4.12, 4.14, 4.20	5.31,	6.7, 6.21, 6.23, 6.28, 6.30, 6.32, 6.39, 6.41, 6.43, 6.49, 6.55

	Mastery	Performance
Approach	Student 4 Student 5	(Student 1) (Student 2 dev) (Student 5)
Avoidance	(Student 4) (Student 6 dev)	Student 1 Student 2 Student 3 Student 6

High stress: Students 1, 3, 6

Low stress: students (2), 4, 5

Appendices

1) Letter to Head Teacher

2) Parent Information Sheet

3) Information sheet for student participants

4) Written consent form for student participants

5) Year group questionnaire

6) Online survey questions

7) Table of the original sources of survey questions

8) Interview schedule

9) Table of ethical considerations

Please fill in below:

Your name ……..

I am happy to participate in this questionnaire and happy for my answers to contribute to research. I will answer truthfully. I will leave blanks if I am unsure or unhappy to answer questions. I know I can speak to [designated staff member] if I have any questions.

Your Signature ……

Date ……

What were you **predicted** grades for your GCSEs?

Subject	Predicted grade

What were your **actual** grades for you GCSEs?

Subject	Actual grade

In your opinion, did you do better, worse or the same as you were predicted by school?

Better **Worse** **The same**

In your opinion, did you do better, worse or the same as you predicted for yourself?

Better **Worse** **The same**

Please tick below which stages of your GCSEs you found most stressful (tick as many as appropriate):

Picking subject choices	Studying in Year 10	Mock exams	Revision	Actual Exams	Getting your results

How would you describe your GCSE experience – from Year 10 through to getting your results?

……
……

……
……

Thank you for taking the time to read this carefully and fill it out.

6 – Online Survey

UNIVERSITY OF BIRMINGHAM

GCSE school survey

Welcome to the Survey

Thank you for participating in our survey. It is really important to the research that your views are gathered.

This survey comprises of three sections:

1) This section relates to the performance data of your school for the previous academic year.
2) This section asks you for your views on student well-being and exam stress.
3) This section asks you about the support in place at your school.

Your opinion is important to the research and any views you have will be treated with confidentiality. All information gained through this survey is securely saved and will only be accessible to the researcher, via a password login. No identifying information will be shared and anonymity will be kept in the resulting publications.

(6.) Throughout the survey, you are able to leave questions and not answer them if you do not wish too. Similarly, this is voluntary and you do not have to take part if you do not wish to.

Tim Roome
Trainee Educational Psychologist
xxxxxxxxxxx
Supervised by:
Dr Colette Soan
xxxxxxxxxxxx

UNIVERSITY OF BIRMINGHAM

GCSE school survey

Section 1 of 3

This section asks questions relating to the performance data of your school.

1. For the last academic year (15/16), what was the overall percentage of Year 11 students to sit 5 or more GCSEs?

2. What was the overall percentage of students who obtained grades A* - C?

3. What was the overall percentage of students who obtained grades A* or A?

4. What percentage of students who sat GCSEs obtained their predicted grades or higher?

UNIVERSITY OF BIRMINGHAM

GCSE school survey

Section 1 of 3

5. In your view, what are the greatest influences on exam performance? (Tick up to 3)

- [ ] Knowledge acquisition of syllabus material
- [ ] Effective revision and exam preparation
- [ ] Exam strategy and time management
- [ ] A fear of failure
- [ ] Remaining calm in exam situations
- [ ] Pressure to succeed from others
- [ ] Self-esteem and confidence
- [ ] Pressure to succeed from oneself
- [ ] Other (please specify)

6. For students who **obtained their predicted grades**, what do you think positively influenced their performance?

	Not at all	A bit	A lot	Definitely
Physical environment (work spaces, school and home support, time)	○	○	○	○
Self-esteem (self-belief, positivity, confidence)	○	○	○	○
Emotional support (self-regulation, friends, family, school, relationships)	○	○	○	○
Management skills (time, resources, study skills, exam skills)	○	○	○	○
Social participation (sense of belonging, friendships, view of same as others)	○	○	○	○

Other (please specify)

3

7. For students who **did not obtain their predicted grades**, what do you think negatively influenced their performance?

	Not at all	A bit	A lot	Definitely
Physical environment (work spaces, school and home support, time)	○	○	○	○
Self-esteem (self-belief, positivity, confidence)	○	○	○	○
Emotional support (self-regulation, friends, family, school, relationships)	○	○	○	○
Management skills (time, resources, study skills, exam skills)	○	○	○	○
Social participation (sense of belonging, friendships, view of same as others)	○	○	○	○

Other (please specify)

UNIVERSITY OF BIRMINGHAM

GCSE school survey

Section 2 of 3

This section asks for your views on student well-being and exam stress.

8. Which would you say has the biggest effect on student well-being?

9. How much do the following things influence student well-being in school?

	Not at all	2	3	4	5	6	7	8	9	Definitely
Work demands	○	○	○	○	○	○	○	○	○	○
Social relationships	○	○	○	○	○	○	○	○	○	○
Control over activities	○	○	○	○	○	○	○	○	○	○
Support for work	○	○	○	○	○	○	○	○	○	○
Changes to routines	○	○	○	○	○	○	○	○	○	○
Emotional support in school	○	○	○	○	○	○	○	○	○	○
Health	○	○	○	○	○	○	○	○	○	○

Other (please specify)

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GCSE school survey

Section 2 of 3

10. In relation to GCSEs specifically, do you think students are:

	Yes	No	Not sure
Positive about thier outcomes	○	○	○
Worried or stressed	○	○	○
Able to enjoy school	○	○	○
Tired or lacking in energy	○	○	○
Positive about themselves	○	○	○
Calm and relaxed	○	○	○
Unhappy or tense	○	○	○
Able to cope	○	○	○

11. In your view, are students stressed and worried by their GCSEs?

Not at all | A bit | A lot | Extremely

12. In your view, is the level of stress the students face acceptable?

It's too much | It's not good | It's ok | Yes, they cope well

13. In relation to their GCSEs, what do you think students are anxious or stressed about specifically?

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GCSE school survey

Section 3 of 3

This section asks questions relating to the support in place in your school.

14. To support students with their well-being, how would you rate the support in school?

Great	Good enough	Just about ok	Not much at all	Non-existent
○	○	○	○	○

15. For which of the following is support given:

	Whole-school approach	Regularly discussed (form groups/PSHE)	Individually upon request	Never
Family issues	☐	☐	☐	☐
Friendship issues	☐	☐	☐	☐
Appearance/social acceptance	☐	☐	☐	☐
Time management	☐	☐	☐	☐
Options for the future	☐	☐	☐	☐
Study and learning	☐	☐	☐	☐

16. In your view, does the school have an ethos that considers the well-being of students?

17. If yes, how is this shown?

18. If no, how could this be improved?

19. If sometimes, how could this be improved?

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GCSE school survey

Section 3 of 3

20. What are the whole-school approaches for GCSE preparation? *(E.g. mock exams, revision periods, classroom support, therapeutic approaches, management)*

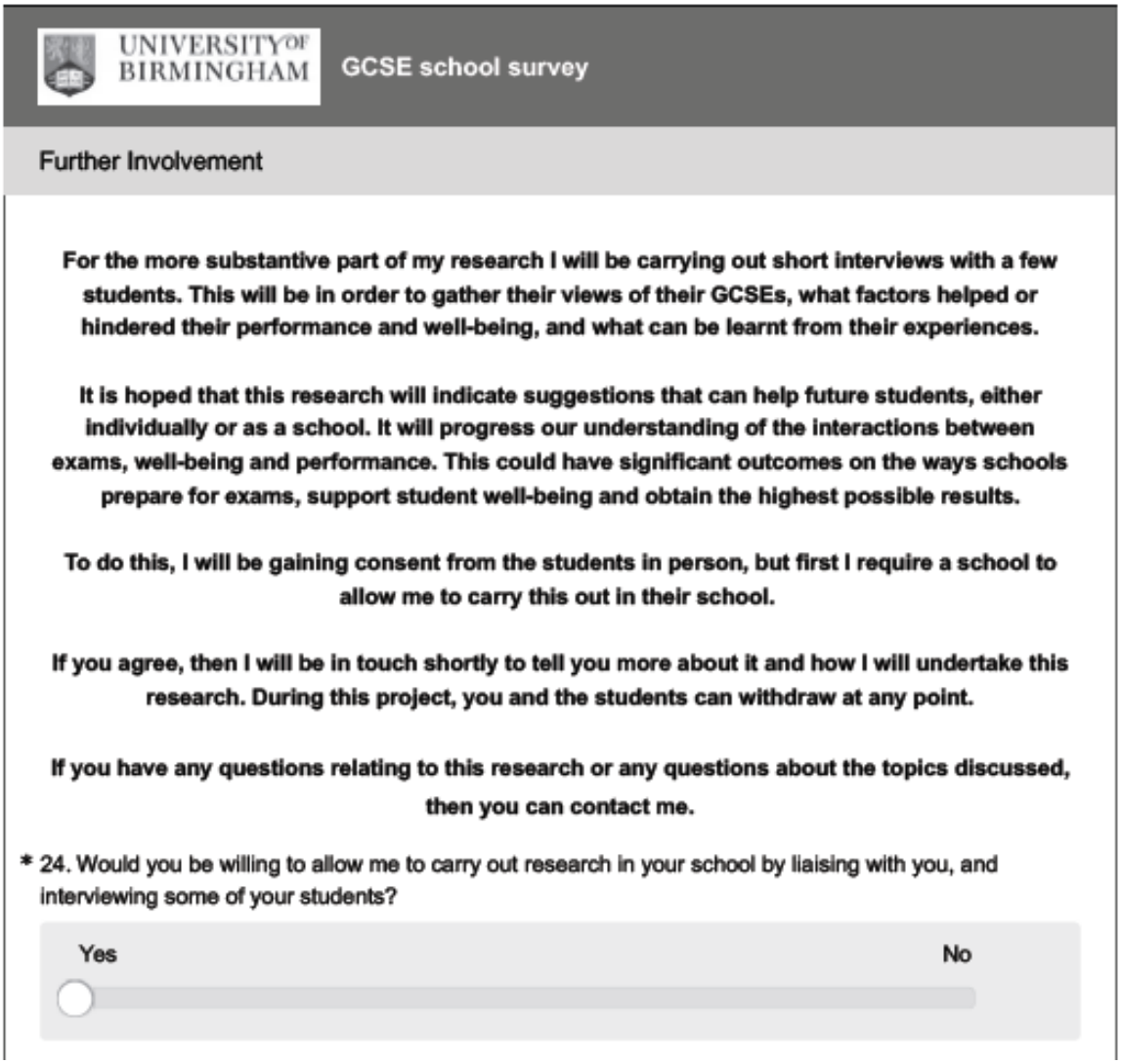
21. What are the individual or group interventions for GCSE preparation? *(E.g. group boosters, 1:1 boosters, study groups, extra lessons, 1:1 support, nurture-type support, counselling, therapeutic approaches, designated support staff, external agencies or support)*

22. In relation to GCSEs, do you think the school adequately supports student well-being?

Not at all	Not very well	Quite well	Very well
○	○	○	○

23. In relation to GCSEs, do you think the school adequately facilitates the students to achieve their academic potentials?

Not at all	Not very well	Quite well	Very well
○	○	○	○



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GCSE school survey

Further Involvement

For the more substantive part of my research I will be carrying out short interviews with a few students. This will be in order to gather their views of their GCSEs, what factors helped or hindered their performance and well-being, and what can be learnt from their experiences.

It is hoped that this research will indicate suggestions that can help future students, either individually or as a school. It will progress our understanding of the interactions between exams, well-being and performance. This could have significant outcomes on the ways schools prepare for exams, support student well-being and obtain the highest possible results.

To do this, I will be gaining consent from the students in person, but first I require a school to allow me to carry this out in their school.

If you agree, then I will be in touch shortly to tell you more about it and how I will undertake this research. During this project, you and the students can withdraw at any point.

If you have any questions relating to this research or any questions about the topics discussed, then you can contact me.

* 24. Would you be willing to allow me to carry out research in your school by liaising with you, and interviewing some of your students?

Yes No

(5.) If you indicated 'yes', then I would be very grateful if you could email me at [redacted] indicating your wishes to be involved and we can arrange this soon after. By doing this, the anonymity of this survey will be maintained.

7 - Table of the original sources of survey questions

My question	Original source (s)	Original question (s)
5. In your view, what are the greatest influences on exam performance? (multiple choice – up to 3) - Knowledge acquisition of syllabus material - Effective revision and exam preparation - Exam strategy and time management - A fear of failure - Remaining clam in exam situations - Pressure to succeed form others - Self-esteem and confidence - Pressure to succeed from oneself - Other – please specify	Approaches and Study Skills Inventory for Students (ASSIST; Tait and Entwistle, 1996)	Conceptions of learning: Building up knowledge by acquiring facts and information. Getting on with the things you've got to do. Making sure you remember things well. Being able to use the information you've acquired. Understanding new material for yourself. Seeing things in a different and more meaningful way. Using all your experiences in life. Developing as a person. Being able to relate to people better.
6. For students who obtained their predicted grades, what do you think positively influenced their performance? - Physical environment - Self-esteem - Emotional support - Management skills - Social participation	Emotional Health and Well-being Questionnaires (leicestershirehealthyschools.org.uk)	Physical Environment 1. What are the things you like about the school building? 2. What makes you feel happy about being in school? 3. What don't you like about the school building? 4. What do you think could be better in the school building?

7. For students who did not obtain their predicted grades, what do you think negatively influenced their performance? - Physical environment - Self-esteem - Emotional support - Management skills - Social participation		Self-Esteem 1. How does your school make you feel special? 2. How does your school let you know you have done a good job? 3. When doesn't this happen? What could be better? Emotional Processing 1. Is there anyone you like to talk to about your feelings? 2. How does school help you when you are having a bad day? 3. When doesn't this happen? What could be better? Self-Management Skills 1. If you are stuck in lessons, how does school help you? 2. How does school help you if you are stuck on your homework? 3. What doesn't this happen? What could be better? Social Participation 1. Does your school have any clubs? Are you part of any? 2. Are there any other clubs you would like in school?
8. Which would you say has the biggest effect on student well-being? (multiple choice)	NUT online stress survey (2016)	Domains of well-being: - Health - Appearance

- School - Home - Both 9. How much do the following things influence student well-being in school? (rating scales) - Work demands - Social relationships - Control over activities - Support for work - Changes to routines - Emotional support in school - Health - Other – please specify	Good childhood Index (GCI) survey (The Children's Society, 2010) Approaches and Study Skills Inventory for Students (ASSIST; Tait and Entwistle, 1996)	- Time use - Future - Family - Friends - Home - Money - School - Local area - Choice - Safety Positive learning approaches: - Seeking meaning - Relating ideas - Interest in ideas - Time management - Alertness to assessment demands Negative learning approaches - Syllabus boundness - Fear of failure - Unrelated memorising
10. In relation to GCSEs specifically, do you think students are: (Yes/No/Not sure) - Positive about their outcomes - Worried or stressed - Able to enjoy school - Tired or lacking in energy - Positive about themselves	Everyday Feelings Questionnaire (EFQ; Youth in Mind, 2005; Uher and Goodman, 2010) Test Anxiety Inventory (TAI; Spielberger, 1980)	In the past 4 weeks, have you felt: - Positive about the future - Worried or tense - Able to enjoy life - Tired or lacking in energy - Stressed - Positive about yourself - Less interested in things you used to enjoy - Calm and relaxed - Very unhappy

- Calm and relaxed - Unhappy or tense - Able to cope	NUT online stress survey (2016)	- Able to cope with what life brings Sources and expressions of test anxiety - Concerns about how others will view you - Concerns arises from threats to your own self image - Concerns about your future security - Concerns about not being prepared - Bodily reactions - Thought disruptions
14. To support students with their well-being, how would you rate the support in school? (scale)	Good childhood Index (GCI) survey (The Children's Society, 2010)	Data: There were some areas where young people tended to be less happy, and in particular there were four areas – school, local area, appearance and the amount of choice – where more than one in eight young people scored less than five out of 10 and could be described as unhappy.
15. For which of the following is support given: (scales) - Family issues - Friendship issues - Appearance/social acceptance - Time management - Options for the future - Study and learning	Good childhood Index (GCI) survey (The Children's Society, 2010) Emotional Health and Well-being Questionnaires (leicestershirehealthyschools.org.uk)	Domains of well-being: - Health - Appearance - Time use - Future - Family - Friends - Home - Money - School - Local area - Choice - Safety

		Physical Environment Self-Esteem Emotional Processing Self-Management Skills Social Participation
20. What are the whole-school approaches for GCSE preparation? 21. What are the individual or group interventions for GCSE preparation?	Everyday Feelings Questionnaire (EFQ; Youth in Mind, 2005; Uher and Goodman, 2010) Test Anxiety Inventory (TAI; Spielberger, 1980)	Sources and expressions of test anxiety - Concerns about how others will view you - Concerns arises from threats to your own self image - Concerns about your future security - Concerns about not being prepared - Bodily reactions - Thought disruptions Deep-thinking approaches Strategic approaches Preparation for higher education Approaches and motives for studying Academic performance Avoiding surface apathetic approach

8 - Semi-structured interview schedule

Before starting the interview:

- Explain the research and the interview process (time and question topics).
- Read the information sheet through with the participant.
- Guide the participant through details of the consent form.
- Check understanding of details on the information sheet and answer any queries.
- If participant consents, ask the participant to sign the consent form.

(10.) Remind participants that there are no right or wrong answers and that the truth is the best. There is no pressure on their answers, and confidentiality will be maintained.

Interview commences (turn on audio-recorder):

- Please see Table 1 (below) for details.

Interview concludes (turn off audio-recorder):

- Thank the participant for taking part.
- Remind participant about details in the information sheet regarding their right to withdraw, and the publication of a public brief regarding the research which if they want to can be sent to them.
- (14.) Debrief and signpost the participant to any support that they may need. Ask if they have any other questions.

Semi-structured interview schedule

Table 1: The following schedule is a guide to the key questions. The order and further questions will be guided by the participant's responses.

Topic	Possible Questions	Follow up questions (prompt)	Probes
(8.) Rapport building and warm up	Did you have a good summer break?	What did you get up to? Did you go away at all? What was it like picking up your results?	

	How are you finding Year 12?	Are you enjoying your subjects?	
Academic attainment	Can you remember what you were predicted for your GCSEs?	Who made these predictions? Did you agree with them?	Would you have changed them at all?
	What did you end up getting in your GCSEs?	Were you happy with these results?	Were these better or worse than the predictions?
	What influenced the difference/similarity between the predicted and actual grades?	Can you think of any reasons for the difference in performance?	
Feelings about last year	How did you feel during the exam prep and during the exams?	How did the exam experience make you feel?	Were there times when it was particularly bad/good? How did you feel after the exams were finished?
	How does this compare to how you usually feel in school?	How would you describe your well-being or mental health?	
	Do you think the exams influenced your well-being?	In what ways?	
What is being done	Did you receive any help in school with your exam prep?	Can you tell me more about the support you got?	Did you get any help from anywhere or anyone else?
	Do you feel the help was enough to support you?	How did it help you get good grades? How did it help your well-being?	
	Do you wish you had more help?	Would the help be different or more of the same? What would the help look like?	

		How would it help you further?	
(9.) Personal mind-sets and goals (link to Achievement Goal Theory)	Thinking about your work in school, can you tell me what motivates you?	Are your reasons for trying hard the same all the time or does it vary? Is it the same for all your subjects?	
	Do you like to be challenged by your work so you can learn new things?	(9.) Do you like learning new things? Why?	
	Are you curious about things, even if they are hard?	What do you do if things are hard?	Do you keep going or give up and do something else? Does it vary?
	Is getting good grades important to you?	Why are grades important/not important to you?	
	Do you compare yourself to others and their grades?		
	Are you happy to share your results with other people?	Friends, family, teachers, employers?	
	When you take exams, do you think you will do well?		
	How do you feel if you can't answer a question?	What makes you feel this way?	
	Do you feel uneasy or upset when you take exams?	Can you describe how it feels?	

Questions on Achievement Goal Theory adapted from:

Motivated Strategies for Learning Questionnaire (MSLQ) Duncan and McKeachie (2005)

Study Process Questionnaire (SPQ) Biggs, J., Kember, D., & Leung, D. Y. (2001).

9) Ethical consideration is in line with the recommendations of the British Educational Research Association (BERA) in their revision (2011) of the 'Ethical Guidelines for Educational Research'. All areas of ethical consideration are presented in the table:

Guideline	***Description***	***Overcoming the ethical considerations***
Responsibilities to Participants	Individuals must be treated fairly, sensitively, with dignity, and within an ethic of respect and freedom from prejudice regardless of age, gender, sexuality, race, ethnicity, class, nationality, cultural identity, partnership status, faith, disability, political belief or any other significant difference.	Throughout the research, within the sampling process, interviewing and analysis, there will be no oppressive or prejudicial actions of any individuals. Within the sampling, for example, many of the characteristics will remain unknown to me; the only known information will be the details pertaining to the inclusion and exclusion criteria.
Voluntary Informed Consent	Participants must understand and agree to their participation without any duress, prior to the research getting underway.	Participants will be offered comprehensive information about the research and written consent will be gained prior to any involvement. It will be clear that they can opt out and not participant if they wish to.
Openness and Disclosure	The researcher will avoid deception or subterfuge unless the research design specifically requires it to ensure the appropriate data is collected or that the welfare of the researcher is not put in jeopardy.	This research does not require any deception of any participants. The aims and reasons for the research will be shared prior to the commencement of their involvement. If at any point I recognise there has been accidental deception, I will make the participants aware of this and correct it as necessary.
Right to Withdraw	The participants must have the right to withdraw from the research for any reason, and at any time. They need to be informed of this right. The participants' decision to withdraw must be accepted. In such circumstances, the research must examine their own actions to assess whether they have contributed to	The participants' rights to withdraw will be made clear prior to the research commencing, during the process and after they have finished their direct involvement. I will accept their decision to withdraw and will not persuade or coerce them into continuing. I may ask questions as to why they have withdrawn, so that I can learn from it and adjust the research accordingly to

	the decision to withdraw and whether a change of approach might persuade the participants to re-engage.	avoid further distress and withdrawal of other participants.
Children and Vulnerable Young People	The research must comply with Article 3 and 12 of the United Nations Convention on the Rights of the Child. All actions should have the best interests of the child as the primary consideration. All participants who are capable of forming their own views must be granted the right to express their views freely in all matters affecting them. Children and Young People shall be facilitated to give fully informed consent. These Articles apply to all participants; children, young people or vulnerable adults involved in the research. Researchers can ensure that they comply with legal requirements in relation to working with school children or vulnerable young people and adults. Researchers must recognise that participants may experience distress in the process and must take all necessary steps to reduce the sense of intrusion and to put them at their ease. Research must desist from any actions that cause emotional or other harm. Recognise concerns relating to the 'bureaucratic burden' of research and seek to minimise the impact on the normal working and workloads of participants.	Throughout the research, the Rights of the Child will be adhered to and considered. There will be measures to protect these rights. For example, if any distress is caused, this will terminate the interviews immediately and support will be offered. There will be support and advice available to all participants, and they will be made aware of these before and after their involvement. The views that the participants share will be dealt with confidentiality and respect. All of their views and comments will be recorded without interpretation, thus representing their opinions accurately. The working expectations on the participants will be kept to a minimum so that the research does not negatively impact on their lives. The length of interviews and their involvement will be indicated beforehand. The participants will be able to withdraw at any point.
Detriment Arising from Participation	Make known to the participants any predictable detriment arising from the process or findings.	All possible impacts of the research will be communicated clearly to the participants prior to the start of the research. They will be given the opportunity

	Any unexpected detriment to participants must be brought immediately to their attention.	to ask questions and gain further information as required. By talking about possibly negative life events, there is a chance that this will resurface the same emotions that they felt at the time; this will be discussed prior to the interviews and support will be offered afterwards.
Privacy	Participant data must be treated with confidentiality and anonymity. Recognise the participants' entitlement to privacy and must accord them their rights to confidentiality and anonymity. Conversely, researchers must also recognise the participants rights to be identified with any publication of their original works or other inputs, if they so wish. Comply with the legal requirements in relation to the storage and use of personal data as set down by the Data Protection Act (1998). People are entitled to know how and why their data is being stored, to what uses it is being put and to whom it may be made available. Participants have the right to have access to any personal data that is stored in relation to them. Data must be kept securely and that the form of any publication, does not directly or indirectly lead to a breach of agreed confidentiality or anonymity.	All recordings and transcripts will be treated with confidentiality and anonymity. Each participant will be given a code to replace their name throughout the process. Data, recordings and transcripts will not be shared with any third parties. The recordings will be destroyed once the transcripts have been written. If participants wish to be named, they will be given a chance to express this and it will be agreed upon. Their name can be included in the research publication. All sensitive data will be stored securely, using encryption and will be destroyed appropriately after its usage. During the research process, the participants will be able to request their data. Contact details will be shared so that easy contact can be made. The publication will not breach the confidentiality and anonymity of the participants, unless agreed upon by them in advance.
Disclosure	Any consideration to disclose actions or behaviour to the appropriate authorities must be done with due care. The decision to override confidentiality and anonymity must be taken after careful and thorough deliberation. It may	If there are actions or shared information that causes me to question the need to disclose these, I will seek appropriate support and supervision. I will, if decided as necessary, disclose information to the appropriate

	be in the researcher's interests to make contemporaneous notes on decisions and the reasoning behind them, in case a misconduct complaint arises. Researchers should debrief participants at the conclusion of the research and to provide them with copies of any reports or other publications. Ensure participants are informed of the outcomes of the research.	authorities (school, local authority, police, etc.). The decision to do so will not be taken lightly, and will be considered carefully before doing so. Participants will be made aware prior to their involvement that this will be the case, should they disclose information of a troubling nature. I will inform participants that the research has concluded and share with them reports and publications. All outcomes of the research will also be shared to those involved in the production of the publication.
Methods	Employ methods that are fit for purpose of the research being undertaken. Offer a full, honest and amenable justification on the final choice of methods. Communicate the extent to which the data collection and analysis techniques, and the inferences to be drawn from the findings, are reliable, valid and generalizable.	The methods chosen for the research will be carefully considered. This will be in answer to the feasibility, appropriateness of the methods chosen, and in consideration of time restrictions for the research. The methods chosen will be clearly described in the publication so that the justifications will be visible. Within the publication, the reliability, validity and the generalizable ability of the findings will be discussed.
Publication	Recognise the right of researchers to independently publish findings of their research under their own names. Fulfil the obligation to ensure that the findings are placed in the public domain, and within reasonable reach of educational practitioners and policy makers, parents, pupils and the wider public.	It will be made clear to all sponsors that the findings and publications will be published under my name, and the names of contributing others. In agreement with the holders of the publication, it will be made public in accordance with the University of Birmingham Thesis guidelines. It will be placed in the public domain so that it is accessible to interested parties.

Responsibilities to the Community of Educational Researchers	Act in a way that is in line with the responsibilities of all those engaged in educational research including academics, professionals, teachers and students.	Throughout the carrying out of the research and in the production of the publication, I will act in accordance with the responsibilities of the research community.
Misconduct	Must protect the integrity and reputation of educational research by ensuring they conduct the research to the highest standards. It must not bring research into disrepute. If the researcher becomes aware of malpractice, or potential malpractice, they must present their concerns, without public accusations or allegations. Make data and methods amenable to reasonable external scrutiny. Researchers must accord due respect to all methodologies and related methods. Contribute to the community spirit of critical analysis and constructive criticism that generates improvement in practice and enhancement of knowledge.	I will do my best to act in a way that represents the community with high integrity and standards. I will not act in a way that brings the research community into disrepute. Any malpractice on my behalf, or any other parties involved in the research will be noted and reported to the appropriate parties, such as the sponsors. External scrutiny, critical review and analysis, and constructive criticism will be welcomed throughout the research. All advice and recommendations will be considered. The research aims to enhance understanding and contribute to the research community.
Authorship	Comprise a list of everyone who has made a substantive and identifiable contribution to the generation of the publications. The order of authorship should reflect the relative leadership and contributions made by the researchers concerned.	Within the written publication, all those who contributed substantively to the research will be named, with their agreement. Any confidentiality will be maintained for those who wish not to be named.
Responsibilities to Educational Professionals, Policy	Seek to make public the results of their research for the benefit of educational professionals, policy makers and a	The research publication will be made public appropriately in order to share the research findings with other professionals.

Makers and the General Public	wider public understanding of educational policy and practice. Endeavour to communicate the findings, and practical significance, in a clear, straightforward fashion and in language judged appropriate to the intended audience.	All findings will be communicated clearly to the participants involved and any other contributors to the publication. The way this is presented will be fit for the intended audiences.